

# PURDUE UNIVERSITY BULLETIN NORTH CENTRAL CAMPUS

## 1978 - 80 ANNOUNCEMENTS



AN EQUAL ACCESS/EQUAL OPPORTUNITY UNIVERSITY

# CAMPUS CALENDAR

## 1978

**SEP**

1	2					
3	4	5	6	7	8	9
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**OCT**

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**NOV**

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**DEC**

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31						

## 1978 Fall Semester

August 28  
*Classes begin*

November 23 & 24  
*Thanksgiving Vacation*

December 13  
*Classes end*

December 19  
*Finals end*

## 1979

**JAN**

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**FEB**

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**JUN**

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**JUL**

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**AUG**

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## 1979 Spring Semester

January 15  
*Classes begin*

March 5-9  
*Spring Break*

May 4  
*Classes end*

May 10  
*Finals end*

May 17  
*Commencement*

## 1979 Summer Session

June 18  
*Classes begin*

August 7  
*Classes end*

August 10  
*Finals end*

# **NORTH CENTRAL CAMPUS**

**Announcements for the Years 1978-80**



**PURDUE UNIVERSITY  
PUBLISHED BY THE UNIVERSITY  
WESTVILLE, INDIANA**



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# PURDUE UNIVERSITY

## Regional Campus Administration

West Lafayette, Indiana

### OFFICERS OF ADMINISTRATION

#### Administrative Officers

ARTHUR G. HANSEN, Ph.D., D.Eng., D.Sc. ....	President
FREDERICK L. HOVDE, D.Sc., LL.D., D.Eng., D.H.L., D.C.L., Ph.D., D.Ed., L.D.H. ....	President Emeritus
FELIX HAAS, Ph.D. ....	Executive Vice President and Provost
FREDERICK R. FORD, Ph.D. ....	Executive Vice President and Treasurer
FREDERICK N. ANDREWS, Ph.D., D.Sc. ....	Vice President for Research and Dean of the Graduate School
WILLIAM J. FISCHANG, Ph.D. ....	Vice President for Student Services

#### Regional Campus Administration

G. WALTER BERGREN, M.S.M.E. ....	Administrative Dean for Regional Campus Administration
JOSEPH M. DAGNESE, M.A., M.S.L.S. ....	Director of Libraries and Audio-Visual Center
JAMES R. KRAYNAK, M.Ed. ....	Director of Admissions
NELSON M. PARKHURST, M.S. ....	Registrar

#### North Central Campus Administrative Staff

JOHN W. TUCKER, Ed.D. ....	Chancellor
G. WILLIAM BACK, M.B.A. ....	Vice Chancellor for Business and Administrative Services
WILLIAM R. FULLER, Ph.D. ....	Acting Vice Chancellor for Academic Services
HARVEY D. MOORE, Ph.D. ....	Vice Chancellor for Student and Community Services
JoELLEN W. BURNHAM, B.A. ....	Campus Relations Officer
JOHN T. COGGINS, M.A. ....	Student Affairs Counseling Center Officer
DAVID S. DONALDSON, M.A.L.S. ....	Librarian
JAMES R. FERGUSON, B.S. ....	Personnel/Purchasing Manager
PEGGY J. HORNUNG, B.S. ....	Comptroller
DAVID P. KONZELMANN, M.S.Ed. ....	Admissions and Financial Aids Officer
HERBERT J. MILLER, B.S.C.E. ....	Director of Buildings and Grounds
JOHN E. MOO ....	Chief of Safety and Security
GEORGE M. ROYSTER, M.B.A. ....	Registration Officer
RICHARD M. SCROGGIN, M.B.A. ....	Computer Center Manager

# **General Information**

Purdue University is the Indiana link in a nationwide chain of 68 land grant colleges and universities. It is a people's University grown out of the demand of the American people that higher education be the birthright of the many, not the privilege of the few.

Long pre-eminent in agriculture, engineering, and science, Purdue has more recently become strong in the humanities and technology.

The year 1969 marked the centennial of Purdue University. From an institution of six instructors and 39 students, Purdue has grown to a major University with a faculty of over 2,200 and a student body of more than 40,000 on four campuses and at Indiana University-Purdue University at Indianapolis (IUPUI).

## **LOCATION**

Purdue University has, in addition to its main campus in West Lafayette, established a series of regional campuses for the purpose of offering educational opportunities in the major population areas of Indiana. The North Central Campus is an outgrowth of the former Barker Memorial Center which was located in Michigan City. The North Central Campus serves communities in the north central part of the state. It is located on a 264-acre site at the junction of the Indiana Toll Road and U. S. 421 at Westville.

## **HISTORY OF THE NORTH CENTRAL CAMPUS**

Following World War II Purdue University started offering courses in facilities loaned to the University by the Michigan City and LaPorte schools. The programs in each of these areas grew, and in 1948 the Barker Welfare Foundation made available to the University the John Barker mansion. All of the area classes were consolidated in this fine old structure in the spring of 1949. Through the 1950's enrollments at the Barker Memorial Center continued to grow, as did the population of the north central region of the state. By the early 1960's it was evident that this part of the state was due for a population boom and significant industrial expansion, and Purdue began to make plans for a new regional campus that could more adequately serve the area.

In May of 1962 Purdue University, through the Ross-Ade Foundation, purchased 160 acres in LaPorte County at a location that could best serve the Tri-City area of LaPorte, Michigan City, and Valparaiso.

With the site available, serious plans started on the development of the first building for the new campus. The Education building, containing 90,000 square feet, provided modern academic facilities when it opened its door in 1967.

In the short span of time since 1967, the North Central Campus has undergone many changes. They are all indicative of the rapid growth of the area it serves, and the increasing educational demands the campus must meet.

Additional parcels of land have been added to the original holding of 160 acres making a total acreage of 264 acres.

In September 1968, construction was begun on a \$750,000 addition on the east side of the building. One year later the addition was ready for occupancy.

In conjunction with the addition, 7,000 square feet of space in the basement of the original structure was completed. It houses the data processing equipment, Admissions-Financial Aids and Registration offices, classrooms and the equipment for TV reception and transmission.

In 1969, the Indiana General Assembly appropriated funds for construction of a second building. The Library-Student-Faculty building was dedicated in March 1975. It encompasses 100,000 square feet of space, 30,000 of which serve as the new library facility. The remainder of the area is used for classrooms, faculty offices, cafeteria, bookstore and student recreation facilities.

Prestige of the North Central Campus has been further enhanced with the North Central Association of Colleges and Secondary Schools award of an operationally separate accreditation from the Purdue system. Purdue North Central is also accredited by the National League for Nursing.

Accreditation attests to the quality of the faculty and staff, the excellence of courses and curricula, and the adequacy of facilities in the goals of this campus.

## ORGANIZATION

The North Central Campus operates as an integral part of Purdue University. Faculty members hold their appointments in Purdue departments and teach courses under departmental control. With the exception of courses in the School of General Studies, course numbers and content are the same for all campuses of the University. Faculty members receive promotion through a University-wide promotion system.

## PURPOSE AND FUNCTION

Purdue University North Central Campus is dedicated to service in the land grant tradition. As a regional campus, Purdue North Central continues this tradition by bringing educational opportunities of a great University to a constantly increasing number of students who might otherwise not be able to share the benefits of the University.

It is the function of the Purdue North Central Campus to provide courses and programs for regular full-time university students working toward degrees. At the same time, it is also the purpose of the institution to make similar opportunities available to part-time students, many of whom are pursuing their educational objectives in the evening.

As a member of the community of northern Indiana, Purdue North Central has a strong obligation to provide educational opportunities, both credit and noncredit, related to the nature of the population and the social, economic, and industrial development of the area. In accordance with a long-standing policy of the Board of Trustees of Purdue University and in

compliance with state and federal laws and regulations, Purdue North Central is an equal access and equal opportunity campus. Educational programs and activities and employment opportunities are available and open to academically qualified and job qualified people without discrimination or regard to their race, national origin, color, religion, sex, age, handicap or veteran status. No application for admission or employment, and no student or employee will be denied the opportunity nor excluded from participation in educational or employment programs, activities or services offered or provided by the Purdue University North Central Campus solely on the basis of race, national origin, color, religion, sex, age, physical or mental handicap, or veteran status, except where bona fide occupational qualifications exist with respect to age or sex in employment.

## PROGRAMS

Although academic work at a number of different levels is offered at Purdue North Central Campus, primary emphasis is on freshman and sophomore curricula requirements offered by the University which lead to a Bachelor of Science or Bachelor of Arts degree.

Two-year, terminal, associate-degree curricula in nursing and various fields of technology are also a major part of the offerings.

Selected graduate courses in a limited number of subject-matter fields, primarily to serve the needs of area teachers, are regularly scheduled at the campus.

Programs, conferences, and short courses, mostly noncredit, related to the interests of the people in the communities served by the Purdue North Central Campus are offered through the Office of Continuing Education.

A nondegree status is available to students who are either unsure of themselves or their goals, or to those who are interested in taking a course or two for personal benefit.

The Purdue North Central Community College, has been formally approved by the faculty of Purdue North Central and the Board of Trustees of Purdue University. The purpose of the Community College is to make post high school educational opportunities more accessible to a broader range of students. A number of new curricula have been, and are being, initiated in the Community College. Among these are a bridge program designed to help students bridge the gap from high school to college, and a secretarial arts and a general business program.

Many students who do not plan to complete a degree at any of the campuses of Purdue University use the North Central Campus to obtain one or two years of credits for transfer to other universities. Since the work taken at the North Central Campus carries regular Purdue University credit, transferability to other universities presents no problem.

# Admission

## GENERAL REQUIREMENTS

All persons wanting to take advantage of the opportunity for higher education at the North Central Campus of Purdue University must file an application for admission. Requests for information and application forms should be addressed to the Office of Admissions, Purdue University, North Central Campus, Junction U. S. 421 and Indiana Toll Road, Westville, Indiana 46391. Students pursuing the baccalaureate and associate degree programs must be high school graduates. A prospective student should complete the application according to instructions and then forward the form to the high school from which he/she is to be or already has been graduated. The high school should then complete the application and return it to the Office of Admissions, Purdue North Central Campus, Junction U. S. 421 and Indiana Toll Road, Westville, Indiana 46391. High school students should make application during their seventh semester of high school, or as soon as possible thereafter. High school graduates should make application immediately. This enables the University to evaluate fully an applicant's eligibility for consideration and to notify the applicant at an early date of the action taken, thus allowing the applicant to make his/her educational plans.

An individual's eligibility for consideration will depend upon many factors, among which are: (1) subject matter requirements for the school or program to which he/she is applying; (2) high school class standing; (3) College Entrance Examination Board test results; (4) high school comments and recommendations; (5) previous college work, if any; and (6) other personal information.

## ADMISSION REQUIREMENTS

An admissions decision is made on an evaluation of the student's total record. Quality requirements include subjects taken, grades in academic courses, high school rank, test scores, and counselor's evaluation.

Students who graduate from non-English speaking high schools need to see the Chairman of the English Department before enrolling in English classes.

Quality Guidelines are listed on Page 9.

## TEST SCORE REQUIREMENTS

SAT is required and should be taken preferably in the spring of the junior year. (Out of state applicants may substitute ACT if it is the state test.)

CEEB Achievement tests in English, math, and chemistry (substitute another science if student has not had chemistry) are highly recommended for students planning to enter science and engineering. These tests should be taken preferably in the spring of the senior year.

## **ALTERNATIVE ACTIONS ON APPLICATIONS**

On the basis of the factors considered, action on the individual's application may be one of the following:

1. Granted unqualified regular admission—this means that the applicant has met all entrance standards and requirements for admission.
2. Admitted to the Bridge Program of the Community College—this applies to the applicant whose academic background and preparation do not meet the entrance standards and/or requirements, but who the University feels has a reasonable chance of gaining regular admission at a later date.
3. Admission on probation—this means that the applicant is admitted with the warning of the University that he/she is academically deficient. If the applicant does not achieve a 3.2 average on a 6.0 system in the first semester the student will be academically dismissed.
4. Admission denied.

Any admission to the University is provisional pending the receipt of all required student information. The University reserves the right to cancel any admission if a student fails to provide all necessary credentials.

### **QUALITY GUIDELINES**

SCHOOL	REQUIRED SUBJECT MATTER		
	Math	Science	Eng.
Engineering	3 sem. alg. 2 sem. geom. 1 sem. trig.	2 sem. lab	6 sem.
Science, Pharmacy and Forestry	3 sem. alg. 2 sem. geom. 1 sem. trig.	2 sem. lab	6 sem.
Management	6 sem. academic math	2 sem. lab	6 sem.
Humanities, Social Science and Education	2 sem. alg. 2 sem. geom.	2 sem. lab	8 sem.
Consumer & Family Sciences	2 sem. alg. 2 sem. geom.	2 sem. lab	6 sem.

### **INDIANA RESIDENT QUALITY REQUIREMENTS**

Applicants should be upper-half quality students. Providing other factors are favorable, upper-half quality usually is met by rank in the upper half of the high school graduating class and may be met with SAT scores in the upper half of the national norms (V + M totaling 950).

Agriculture and Preveterinary Science and Medicine	2 sem. alg. 2 sem. geom.	2 sem. lab	6 sem.
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Technology	2 sem. alg. 2 sem. geom.	2 sem. lab	6 sem.
Physical Education for Men	None	2 sem. lab	6 sem.

Applicant must be an upper two-thirds quality student. Upper two-thirds quality is usually met by rank in the upper two-thirds of the high school graduating class or SAT scores (V + M totaling 750 or above).

Community College	High School Graduation or Equivalent
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### QUALITY REQUIREMENTS

#### OUT OF STATE QUALITY REQUIREMENTS

Applicants should be upper-third quality students. Providing other factors are favorable, upper-third quality usually is met by rank in upper third of high school graduating class and may be met with test scores in the upper third of national norms (SAT V + M totaling 1050 or an ACT composite totaling 22).

### TRANSFER STUDENTS

An applicant transferring from another college or university must fulfill the following requirements in order to be considered for admission:

1. Submit an application for admission on the prescribed form through the high school from which he/she was graduated, including the SAT test results.
2. Forward an official transcript of work done in institutions previously attended to the Office of Admissions at the North Central Campus.
3. Transfer students must meet subject matter requirements, have a strong C average (out-of-state students B), and be in good standing at all schools attended.

Credit earned at other institutions will be evaluated in terms of how it fulfills the graduation requirements at Purdue University. Evaluation of credit is completed after a student is admitted to the University.

### NONDEGREE STUDENTS

Persons who desire to take advantage of the instruction in any of the departments of the University without undertaking one of the regular plans of study and without becoming a candidate for a degree may be admitted as nondegree students. Such students must present evidence that they are prepared to undertake the work desired and must progress satisfactorily in their work.

Admission as a nondegree student is for one semester only and any further enrollment must be approved by the Office of Admissions. A maximum of 11 credit hours may be taken in any one semester and a maximum of 24 credit hours may be taken while classified as a nondegree student.

A personal interview with a member of the Office of Admissions staff prior to admission as a nondegree student is encouraged. Any student who is registered in another college or university and wishes to attend Purdue during the same semester must submit a letter from the other institution approving the specific courses to be taken at the North Central Campus. All students who have been previously enrolled in another institution must have a letter of good scholastic and social standing on file with the Office of Admissions prior to enrollment. Application for admission as a nondegree student should be made to the Office of Admissions at the North Central Campus.

## **RE-ENTRY STUDENTS**

Any person in good standing who has formerly attended Purdue but has not been in attendance for a semester or more must submit an application for re-entry obtainable from the Registration Office. Each individual situation will determine the status of the person's eligibility for re-entry.

## **RE-ADMISSION OF STUDENTS**

Any person who has been formally dropped from the University for academic reasons and wishes to re-enter must make application for re-admission to the Scholastic Delinquencies and Re-admissions Committee. Forms for initiating this procedure are available in the Registration Office at the North Central Campus.

## **ADVANCED PLACEMENT AND ADVANCED CREDIT**

### *What Is Meant by Advanced Placement and Advanced Credit?*

1. Advanced placement means that a student is placed in an advanced level course but no credit toward a degree is awarded for prior courses.
2. Advanced credit means that college credit is established in one or more subjects and the total credit is recorded on the student's record.

### *Who Should Consider Establishing Advanced Credit?*

The student who has taken a strong college preparatory program, has achieved at a high level, and has strong test results should seriously consider the possibility of establishing advanced credit. Personal factors as well as your academic record should be considered.

### *How Is Advanced Placement and/or Advanced Credit Established?*

Advanced credit or advanced placement can be established by any of the following methods.

1. The Purdue Advanced Credit Examinations.

The Purdue Advanced Credit Examinations will be given during the summer advanced enrollment program (a student's Day on Campus)

and during the delayed enrollment period just before classes begin. A description of the subject matter to be covered in the examination, test dates and locations, procedures to follow in applying to take the tests, and general instructions will be mailed to each student qualified to be considered for advanced credit. Any questions about advanced credit should be directed to the director of the counseling staff of your school.

## 2. The College Board Advanced Placement Program.

Credit can be established on the basis of test results taken at the completion of the advanced placement course in high school. The score required to establish credit varies according to the test.

<b>Subject Area</b>	<b>AP Score</b>	<b>Purdue Credit Granted</b>
Biological Sciences	4 or 5	3 semester hours
Chemistry	4 or 5	8 semester hours
English	3, 4, or 5	3 semester hours
History		
American	3, 4, or 5	6 semester hours
European	3, 4, or 5	3 semester hours
Math	3, 4, or 5	5 to 10 semester hours depending on the grade
Foreign Language	3, 4, or 5	At least 6 semester hours
Physics	3, 4, or 5	4 semester hours

## *College Level Examination Program (CLEP)*

The College Level Examination Program is designed for the purpose of evaluating nontraditional college-level education such as independent study, correspondence work, and credit earned from nonaccredited institutions.

### 1. General examinations

No credit will be given on the basis of the general examination. Transfer students who previously attended a nonaccredited institution may take the general examination. If an average score of 500 or above is received on the five tests, the credit established at the nonaccredited institution may be evaluated for credit at Purdue.

### 2. Subject matter examinations

Purdue credit may be established by taking certain subject matter examinations. A list of examinations approved by the faculty and the score required to establish Purdue credits are available upon request from the Admissions/Financial Aid office.

## AUDITING CLASSES

Courses may be audited. No grades or credits are received. Attendance in class is permissible when the regular class fees are paid and the individual has declared himself/herself as a visitor.

## **RESERVE OFFICER TRAINING**

Students planning to transfer to the West Lafayette Campus are now eligible for a two-year advanced ROTC program leading to a commission in the Army, Navy, and Air Force. The program is available to anyone having four full academic semesters remaining on the West Lafayette Campus, including graduate school.

Students applying for the two-year program and accepted by the service concerned attend a six-week summer training camp during the summer immediately preceding their planned entry into ROTC classes, which may be either in the fall or spring semester. This six-week training substitutes for the first two years of basic ROTC. Students are paid approximately \$450 during this six weeks plus transportation, housing, and all meals.

Two-year students receive the same benefits as four-year ROTC students. These include \$100 per month allowance, free uniforms, and free military textbooks. Scholarships are also available which pay full tuition, books, and fees plus \$100 per month tax-free allowance. Flight training is available in the last year for those who are interested and qualify. This consists of about 36½ hours of flight instruction and 35 hours of ground school at no cost to the student. Upon completion the student may be granted a private pilot's license.

There is no obligation incurred in applying for this program. Applications are accepted at any time up to about April 1 preceding the six-week summer training.

For further information and additional details, you may call or write:

Professor of Military Science  
U. S. Army ROTC  
Purdue University  
West Lafayette, Indiana 47907  
Telephone: 749-2275, 749-2811

Professor of Aerospace Studies  
U. S. Air Force ROTC  
Purdue University  
West Lafayette, Indiana 47907  
Telephone: 749-2614

Professor of Naval Science  
U. S. Naval ROTC  
Purdue University  
West Lafayette, Indiana 47907  
Telephone: 494-8157

## **Financial Aid**

The Financial Aid department of the Admissions-Financial Aid Office will attempt to provide aid to eligible students who require financial assistance to attend Purdue North Central.

## **APPLICATION PROCESS**

In order to be considered for financial aid a student must gain admission as a degree-seeking student at Purdue North Central and must complete the appropriate application forms. The priority filing date for those seeking aid for the academic year commencing in the fall semester is March 1. Applications submitted after June 1 can be considered only for the spring semester. An application for financial aid must be submitted for each year that aid is requested. All students are urged to apply for a Basic Educational Opportunity Grant.

## **AVAILABLE FINANCIAL AID**

The chart below lists the types of aid available, the qualifications for each, and the required application forms.

### **Financial Aid**

<b>TYPE OF AID</b>	<b>QUALIFICATIONS</b>	<b>REQUIRED FORMS</b>
Basic Educational Opportunity Grant	U.S. citizen Greatest financial need 6 or more semester hours	Basic Educational Opportunity Grant application
Indiana State Scholarship	U.S. citizen Indiana resident planning to attend a college or university within Indiana Financial need High scholastic achievement 12 or more semester hours First-time applicant must be entering college freshman under 24 years old	Indiana State Scholarship application by December 1 Financial Aid Form (FAF) by January 15
Indiana Educational Grant	U.S. citizen Indiana resident planning to attend a college or university within Indiana Financial need 12 or more semester hours First-time applicant must be entering college freshman under 24 years old	Indiana Educational Grant application by December 1 Financial Aid Form (FAF) by January 15

<b>Child-of-Disabled-Veteran Grant</b>	U.S. citizen Indiana resident Either parent suffered a service-connected disability to which the VA will attest Financial need is not a consideration	Child-of-Disabled-Veteran application to be filed 6 weeks prior to the start of the semester Verification from Veterans' Administration 4 weeks prior to the start of the semester
<b>Purdue North Central Scholarship</b>	U.S. citizen Indiana resident 12 or more semester hours High scholastic achievement Financial need	Purdue North Central aid application by March 1 Financial Aid Form (FAF) by March 1
<b>Supplemental Educational Opportunity Grant</b>	U.S. citizen Greater financial need 6 or more semester hours Academic or creative promise Award must be matched dollar-for-dollar with another type of university-administered aid, i.e., loan or work	Purdue North Central aid application by March 1 Financial Aid Form (FAF) by March 1
<b>National Direct Student Loan</b>	U.S. citizen Financial need 6 or more semester hours	Purdue North Central aid application by March 1 Financial Aid Form (FAF) by March 1
<b>College Work/Study</b>	U.S. citizen Financial need 6 or more semester hours Potential to succeed academically	Purdue North Central aid application by March 1 Financial Aid Form (FAF) by March 1
<b>Nursing Grant</b>	U.S. citizen Greater financial need 6 semester hours or more Nursing Technology major	Purdue North Central aid application by March 1 Financial Aid Form (FAF) by March 1
<b>Nursing Loan</b>	U.S. citizen Financial need 6 semester hours or more Nursing Technology major	Purdue North Central aid application by March 1 Financial Aid Form (FAF) by March 1

# **Registration**

## **ADVANCE REGISTRATION**

Current students should preregister for fall, spring, and summer sessions at announced times. New students should preregister at the times specified by the registration officer. Advance registration eliminates standing in line and assures preferential scheduling.

## **DELAYED REGISTRATION**

For students who are unable to preregister, a registration period is held just prior to the beginning of classes. Consult the current semester schedule for dates and times.

## **LATE REGISTRATION**

The late registration period for the fall and spring semesters ends one week after the first day of classes. In the summer session, the late registration period closes three days after the first day of classes. Late registration fees are explained on page 19.

## **DROPPING AND ADDING COURSES**

A student may add a course to his/her schedule during the first week of classes (first three days of summer school). In order to effect a withdrawal from any class, a student must secure the signature of his/her advisor. He/She must turn in the signed drop-add card to the Registration Office at the time of withdrawal. Discontinuance of class attendance is not the basis for withdrawal, and students who do not notify the office when they plan to withdraw will be given a failing grade in each course involved. To drop a course, consult the fee refund schedule on page 19 and the directed grades explanation on page 21.

## **TRANSFER OF ENROLLMENT TO THE WEST LAFAYETTE CAMPUS**

Upon the completion of any semester or summer session a student may transfer his/her enrollment from the North Central Campus to the West Lafayette Campus. To initiate this process the student must report to the Registration Office and complete the necessary form. Following this procedure he/she will receive an "Authorization for Enrollment" form from the West Lafayette Campus along with instructions for registration. Only students attending on regular status and not on probation may transfer to the West Lafayette Campus.

"Unclassified" students and Community College students must be admitted to a school before they are eligible to transfer. It is not recommended that a student transfer at mid-year.

# Student Services

## COUNSELING CENTER/STUDENT AFFAIRS OFFICE

The Counseling Center/Student Affairs Office offers services in the following areas:

(1) *Personal Counseling*

Individual counseling is available for a variety of problems which may cause personal distress or maladjustment.

(2) *Vocational Counseling*

Career counseling is available for individuals who are dissatisfied with their present major in college and/or those individuals who have not clarified their immediate or long-range vocational goals.

(3) *Group Counseling*

Group facilitators are available on a semester basis to aid individuals interested in the "values clarifications" process. A maximum of sixteen students can be accommodated.

(4) *Educational Counseling*

The Counseling Center provides services to students experiencing difficulty in their academic work. Assistance is available in study techniques, scheduling of study time and other problems related to academic performance. The Center acts as advisor to non-degree students.

(5) *Testing*

Individual tests relating to achievement, aptitude, personality, mental ability and interest are available upon request. Also a specially developed test battery is available at a fee of \$5.00 for enrolled students and \$25.00 for non-students.

The goal of the Counseling Center is to help the individual attain a stage of development where he/she can honestly look at himself/herself and eventually reach a point where there is some element of satisfaction in what he/she sees.

(6) *Placement and Housing*

Purdue North Central provides information regarding Placement. This information is available in the Student Affairs/Counseling Center Office.

A weekly placement and housing list is published by the Counseling Center. The placement listings contain both part and full time employment. Some effort will be made to have interviews on campus with prospective employers in the spring.

(7) *Student Activities*

Any registered student is eligible to participate in the activity program. Student input into the activity program is encouraged and appreciated. The F.A.C.E. Committee (Fine Arts, Convocations and Events) coordinates the programming and is open to suggestions. In addition, a number of clubs and organizations are active at the campus and welcome your participation.

(8) *Student Newspaper*

The Counseling Center/Student Affairs staff act as advisor and consultant to the student newspaper, the Campus Rapport. All students are encouraged to indicate their interest in joining the newspaper staff. Editions of the paper are bi-monthly and staffers have the opportunity to gain valuable newspaper experience.

(9) *Discount System*

All faculty, staff, and students obtain a discount card in the Counseling Center. These cards entitle the bearer to reduced rates at over 60 local merchants and are available in late September. Cards cannot be replaced.

(10) *Intramurals*

A full complement of indoor and outdoor activities will be provided for students: softball, football, basketball, tennis, etc., tournaments are planned. In addition pool, ping-pong, pinball, etc. tourneys will be staged. Student input is encouraged in the program development.

(11) *Intercollegiate Athletics*

- (a) A golf team is open to all student carrying 12 credits. Home matches are played at Beechwood Country Club in LaPorte. This year's team will play in five tournaments and ten dual matches.
- (b) A tennis team is open to all interested students carrying 12 credits. Six matches are scheduled for the fall term and ten matches in the spring.

## **INSURANCE**

Low cost University accident and health insurance similar to the policy offered at the West Lafayette Campus is offered annually to all students carrying an academic load of eight hours or more. Students may take advantage of the opportunity at the beginning of each semester.

## **Fees**

Fees are subject to change by the Board of Trustees without notice. All fees are payable at the time of registration each semester.

**Course Fees.** Purdue North Central has a fee structure different from that at the West Lafayette Campus. Fees are based on an established amount per credit hour, plus a laboratory fee if the course includes laboratory work.

	<b>Resident</b>	<b>Nonresident</b>
Undergraduate	\$24.50 per credit hour plus \$8 per lab hour	\$54.00 per credit hour plus \$8 per lab hour
Graduate	\$32.00 per credit hour plus \$8 per lab hour	\$64.00 per credit hour plus \$8 per lab hour

**N.B.** Undergraduate students pay undergraduate fees; graduate students pay graduate fees regardless of the course number or the objective for which the course is taken. (A graduate student is one who has been awarded a baccalaureate degree.)

**Athletic-Activity Fee.**

Activity Fee \$10.00

Athletic Fee \$5.00

All undergraduate students carrying nine (9) or more credit hours must pay an athletic-activity fee. The fee is optional for students enrolled in less than nine credit hours. It is not applicable during the summer session. The fee is refundable only during the 100% refund period.

**Late Registration Fees.** The charge for the late registration is \$5 per course with a maximum of \$25, beginning on the first day of classes.

**Breakage Fees.** Course fees include the cost of normal breakage and wear and tear on equipment. An additional charge will be levied against individuals for excessive waste, loss, or breakage that may occur. Such special charges must be paid before course credit will be given.

**Diploma Fees.** All students must pay a \$10 diploma fee not less than 30 days before the close of the semester in which they expect to complete their work for a degree.

**Refunds.** Course fees will be refunded under any one of the following conditions:

<b>Period of Withdrawal</b>	<b>Refund Percentage</b>	
	<b>Semester</b>	<b>Summer Session</b>
First week .....	100	100
Second week .....	60	40
Third week .....	40	0
Fourth week .....	20	0
Fifth week .....	0	0

To be eligible for a refund, the student must notify in person the registration officer and complete the necessary withdrawal procedures.

**Special Examination Fees.** To establish credit by examination, a nondegree student or a student currently enrolled carrying less than 12 credit hours must pay a fee of \$25 per course.

**Withdrawal.** In order to effect a withdrawal from any class, a student must notify his/her assigned faculty advisor and registration officer at the time of withdrawal. Discontinuance of class attendance is not the basis for withdrawal, and students who do not notify the Registration Office when they plan to withdraw will be given a failing grade in each course involved.

# **Grading**

## **ASSIGNING OF GRADES**

Instructors will assign each student a grade for each course in which he/she is enrolled at the close of a session. The student shall be responsible for the completion of all required work by the time of the last scheduled meeting in the course unless his/her assignment to the course has been properly cancelled. The grade shall indicate the student's achievement with respect to the objectives of the course.

### **For Credit Courses:**

A— highest passing grade.

B

C

P— passing grade for the pass/no pass option.

D— lowest passing grade; passing minimal objectives of the course.

E— conditional failure; failure to achieve minimal objectives, but only to such limited extent that credit can be obtained by examination or otherwise without repeating the entire course. This grade represents failure in the course unless and until the record is duly changed within one semester. It cannot be changed to a grade higher than a D.

F— failure to achieve minimal objectives of this course. The student must repeat the course satisfactorily in order to establish credit in it.

N— not passing for the pass/no pass option. Issued when the student's grade would be a D or F under the letter grade option.

**Pass/No Pass Option.** The pass/no pass option provides students with the opportunity to broaden their educational foundations with minimal concern for grades earned. The option is open to all students in the University subject to the regulations of the school in which the student is enrolled. Subject to the regulations of his/her school, a student may elect this option in any course which does not already appear on his/her academic record and in which he/she is otherwise eligible to enroll for credit with letter grade. A student may not elect this option for more than 20 percent of the total credit hours required for his/her graduation.

A student who is enrolled in a course under this option has the same obligations as those who are enrolled in the course for credit with letter grade. When the instructor reports final grades in the course, he/she will report that any such student who would have earned a grade of A, B, or C has passed the course, and that any other such student has not passed.

**For Zero Credit Courses** (including thesis research but not including laboratory portions of courses in which, for purposes of scheduling, separate course designation and separate class cards are used for the laboratory sections):

S— satisfactory; meets course objectives.

U— unsatisfactory; does not meet course objectives.

**For Incomplete Work**, either credit or noncredit:

- O— incomplete; no grade; a temporary record of work which was interrupted by unavoidable absence or other causes beyond a student's control, and which work was passing at the time it was interrupted. An instructor may require the student to secure the recommendation of the student affairs officer that the circumstances warrant a grade of incomplete. The student must achieve a permanent grade in the course no later than the twelfth week of the second subsequent semester of enrollment, or the O grade will revert to a failing grade.
- OP— incomplete, for pass/no pass option. Has the same provisions as the O for letter grade option.

**Directed Grades.** The registration officer is directed to record the following grades and symbols under special circumstances:

- W— withdrew; a record of the fact that a student was enrolled in a course and withdrew or cancelled the course after the third week of the regular semester.
- WF— withdrew failing; a record of course cancellation during the tenth to twelfth week of the regular semester, at which time, according to a statement from the instructor, the student was not passing in his/her work. This grade counts in all respects as a failing grade. A grade of WF may be directed by the vice chancellor for academic services, or the Committee on Scholastic Delinquency and Re-admission when a student is dropped from a course for serious scholastic delinquency.

## GOOD STANDING

For purposes of reports and communications to other institutions and agencies and in the absence of any further qualification of the term, a student shall be considered in good standing unless he/she has been dismissed, suspended, or dropped from the University and has not been re-admitted.

## SCHOLARSHIP INDEXES

The scholarship standing of all regular students enrolled in programs leading to an undergraduate degree shall be determined by two scholarship indexes, the semester index and the graduation index.

1. The semester index is an average determined by weighing each grade received during a given semester by the number of semester hours of credit in the course.
2. The graduation index is a weighted average of all grades received by a student while in the curriculum in which he/she is enrolled plus all other grades received in courses taken in other curricula offered by the University and properly accepted for satisfying the requirements of the curriculum of the school in which the student is enrolled. With the consent of his/her advisor, a student may repeat a course. In the

case of courses which have been repeated, or in which conditional grades have been removed by examination, or for which a substantially equivalent course has been substituted, the most recent grade received shall be used.

3. For the purpose of averaging, each grade shall be weighed in the following manner:

A—	6 x semester hours = index points
B—	5 x semester hours = index points
C—	4 x semester hours = index points
D—	3 x semester hours = index points
E,F,WF—	2 x semester hours = index points
O,W	not included

## CLASSIFICATION

Freshman	0-30 hours
Sophomore	31-60 hours
Junior	61-90 hours
Senior	91 hours or above

## GRADUATION INDEX REQUIREMENT

For the associate degree: a minimum graduation index of 3.90 shall be required for graduation.

For the bachelor's degree: a minimum graduation index of 4.00 shall be required for graduation.

## SCHOLASTIC PROBATION

Any student except nondegree (temporary) students shall be placed on probation if his/her semester or graduation index at the end of any semester is less than that required for a student with his/her classification as shown in Table A. A student on probation shall be removed from that status at the end of the first subsequent semester in which he/she achieves semester and graduation indexes equal to or greater than those required for a student with his/her classification as shown in Table A. Any grade change due to a reporting error will require reconsideration of probation status.

Nondegree (temporary) students who do not achieve academic standing required of regular students may not be permitted to continue in attendance. Probation is concerned only with the regular semesters and not with the summer sessions and intensive courses.

## DROPPING OF STUDENTS FOR SCHOLASTIC DEFICIENCY

A student on scholastic probation shall be dropped from the University if at the close of any semester the semester or graduation index is less than that required of a student with his/her classification as shown in Table B. This rule shall not apply for the semester in which the student completes all requirements for his/her degree. A student dropped by this rule and later duly re-admitted as a regular student shall be re-admitted on probation.

Applications for re-admission to the University from students who have been dropped for academic reasons must be accompanied by a check or money order, not cash, for \$50 made payable to Purdue University. Processing of the application will not begin until the fee is paid. Application may be obtained from the Registration Office.

#### TABLE A. INDEX LEVELS FOR PROBATION

S = Semester Index; G = Graduation Index

Classification	S	G
1	3.5	3.5
2	3.5	3.5
3	3.6	3.75
4	3.6	3.90
5	3.7	3.95
6	3.7	4.0
7	3.7	4.0
8 and up	3.7	4.0

#### TABLE B. INDEX LEVELS FOR DROPPING

S = Semester Index; G = Graduation Index

Classification	S	G
1*	3.2	3.2
2	3.3	3.3
3	3.4	3.5
4	3.4	3.6
5	3.5	3.7
6	3.5	3.8
7	3.5	3.85
8 and up	3.5	3.9

### DISTINGUISHED STUDENTS

Regular undergraduate students, carrying at least 12 semester hours, who successfully complete all their courses with a grade C or higher and obtain a semester scholarship index of 5.50 or better will be designated as distinguished for that semester.

### DEGREES WITH DISTINCTION

Degrees are awarded at the end of each semester and summer session to candidates who have completed the requirements of their schools. At each of these periods, degrees with distinction are awarded to those completing the undergraduate plans of study under the following rules:

\*Affects only students entering on probation.

1. Distinction at graduation shall be awarded on the basis of all course work taken. Baccalaureates with distinction shall be granted only to those who complete the four (or five) year curricula at Purdue and not to those who complete only the first three years at Purdue.
2. A candidate for the baccalaureate with distinction must have earned at least 70 hours of credit at Purdue. A candidate for an associate degree with distinction must have earned at least 45 hours of credit at Purdue. For any student to qualify for distinction, his/her scholarship index for all work completed must be at least 5.00.
3. If the number of graduates in any school who qualify for distinction under rules (1) and (2) exceeds one-tenth of the total number of graduates from that school and for that semester or summer session, the number of degrees with distinction shall be limited to one-tenth of the class in that school, and those graduates with the highest indexes shall be included. In administering this rule all baccalaureate engineering graduates will be considered as one school and all associate degree graduates will be considered as one school.
4. Of those students who qualify for distinction under these rules, the three-tenths of the baccalaureate graduates having the highest indexes shall be designated as graduating with highest distinction, irrespective of the schools to which they may belong. The three-tenths of the associate degree graduates having the highest indexes will be designated as graduating with the highest distinction.
5. No student with a record of faculty discipline shall be included without special approval by the faculty.

## Plans of Study

### ABBREVIATIONS

The following abbreviations of subject fields are used in the Plans of Study and Descriptions of Courses sections of this catalog:

A&AE	Aeronautics and Astronautics	CE	Civil Engineering	ED	Education
A&D	Art and Design	CET	Civil Engineering Technology	EE	Electrical Engineering
AGEN	Agricultural Engineering	CHE	Chemical Engineering	EET	Electrical Engineering
AGEC	Agricultural Economics	CHM	Chemistry		Technology
AGR	Agriculture	CHT	Chemical Technology	EG	Engineering Graphics
AGRY	Agronomy	CIS	Computer and Infor- mation Systems	ENGL	English
ANSC	Animal Sciences	CS	Computer Sciences	ENGR	Engineering
ANTH	Anthropology	C&T	Clothing and Textiles	ESC	Engineering Sciences
ART	Architectural Technology	COM	Communication	F&N	Foods and Nutrition
BC	Building Construction and Contracting	CPT	Computer Technology		
BCHM	Biochemistry	ECON	Economics		
BIOL	Biological Sciences				

FOR	Forestry and Conservation	IE	Industrial Engineering	NUR	Nursing Technology
FR	French	IET	Industrial Engineering	PCOL	Pharmacology
GEOS	Geosciences		Technology	PEM	Physical Education for Men
GER	German			PEW	Physical Education for Women
GNC		IT	Industrial Technology	PHAR	Pharmacy
GBA		M	Management	PHIL	Philosophy
GSA		LS	Land Surveying	PHYS	Physics
GNT	General Studies Technology	MA	Mathematics	POL	Political Science
GS	General Studies Humanities	ME	Mechanical Engineering	PSY	Psychology
HIST	History	MSE	Materials Engineering	RUSS	Russian
HORT	Horticulture			SOC	Sociology
IAT	Industrial Arts Teaching	MET	Mechanical Engineering	SPAN	Spanish
IDE	Interdisciplinary Engineering		Technology	SPV	Supervision
		MUS	Music	STAT	Statistics

## School of Agriculture

The School of Agriculture offers over 30 plans of study leading to the degree of Bachelor of Science and Bachelor of Science in Forestry. Upon admission to the School of Agriculture, the student must meet with the academic advisor to develop a sequence of courses leading to a clearly defined program. Undergraduate plans of study are offered in the following areas:

**Agricultural Communications**—for students interested in communicating agriculture-related information through the four mass media—radio, television, film, and journalism.

**Agricultural Economics**—prepares men and women for the business side of agriculture. Studies are concentrated in marketing, farm management, prices, statistics, and finance.

**Agricultural Education**—toward earning a license to teach vocational agriculture in high schools.

**Agricultural Engineering**—professional engineering training for service to rural communities and careers with agricultural equipment manufacturers.

**Agricultural Mechanization**—technical and academic preparation for careers in sales, service, and applications of the mechanized phases of agriculture and related businesses.

**Agricultural Meteorology**—emphasizes statistical and microclimatology to prepare students for careers in agricultural and forestry meteorology and graduate studies in the environment sciences.

**Agricultural Science**—broad training in basic agricultural sciences. The curriculum is designed primarily for those who plan graduate studies in the life sciences.

**Agronomy**—specialization in plant genetics, crop production, and soil problems.

**Animal Sciences**—livestock breeding, animal nutrition, and management problems. Preparation for commercial fields allied to meat, poultry, and dairy products.

**Biochemistry**—preparation for careers with food, fertilizer, and pharmaceutical industries related to the life sciences. Provides background for graduate work in biochemistry and plant and animal sciences.

**Community Development**—provides training to qualify the student to work with local communities, agencies, organizations, or groups involved in solving community problems; is interdisciplinary, integrating sociological-humanistic courses with agriculture.

**Entomology**—training for careers in government and industry in sales, research, insect control, and insecticide regulation.

**Food Business Management**—is designed for the student with a primary interest in management and/or marketing positions in the nation's food processing and distribution firms.

**Food Engineering**—professional training in agricultural engineering and food science for careers in food production, processing, packaging, transportation, and equipment manufacturing industries.

**Food Science**—training to qualify for positions in the food industry. Strong science background emphasized in the curriculum.

**General Agriculture**—provides a wide choice of agricultural and other subjects as a background for individual objectives or a general agricultural education.

**Horticulture**—academic and technical training for careers in horticulture, food processing, and allied industries.

**International Agriculture**—students in any option may work with the International Advisory Committee and carry appropriate electives. Foreign experience is a possibility.

**Landscape Architecture**—training in design and planning for residential, industrial, and community landscaping.

**Management: Business and Farm**—training for managerial careers in agriculture-related industries.

**Natural Resources and Environmental Science**—a curriculum which faces the problems of environmental quality as it relates to human welfare; provides flexibility to develop individual study that will prepare the student to contribute to the solution of environmental problems.

**Plant Protection**—provides a comprehensive, organized treatment of the principles of plant protection and their application, including the proper use of modern pesticides; prepares students for careers in agricultural chemical companies, agribusinesses, and federal and state regulatory agencies.

**Preforestry Program**—a two-year program designed to meet requirements for admission to the Purdue School of Forestry options.

**Forest Management**—broad training in fundamental concepts of professional forestry needed for enlightened management of nonagricultural lands.

**Forest Products Industry**—broad training in the manufacture and use of wood and fiber products to prepare graduates for jobs in timber resource harvesting, timber utilization, wood products manufacture, and sales.

**Forest Recreation**—prepares students to be forest land managers who are especially trained to provide diverse recreational opportunities for human enjoyment.

**Urban Forestry**—trains students to work with the unique ecological and social problems of managing trees in urban environments.

**Wildlife Management**—prepares students to be land managers especially trained to protect and improve wildlife resources for their aesthetic, recreational, ecological, or commercial values.

**Preveterinary Medicine**—a two-year program designed to meet requirements for admission to the Purdue School of Veterinary Science and Medicine.

**Soil and Crop Science**—preparation for technical phases of agronomy and for graduate studies in soils and plant genetics and nutrition leading to careers with government and industry.

**Turf**—training in plant and soil science and chemistry leading to careers with public and private golf courses, parks, and recreational areas.

**Urban and Industrial Pest Control**—specialization in controlling pests in homes and commercial facilities, for careers with industries, government agencies, and private businesses.

For a discussion of the various options, refer to the bulletin of the School of Agriculture. The first two years of most programs are offered at the North Central Campus.

#### **REQUIRED FRESHMAN YEAR\***

##### **First Semester**

- (4) BIOL 108 (Biology of Plants)
- (3) CHM 111 (General Chemistry)
- (3) ENGL 101 (English Composition I)
- (3) MA 153 (Algebra and Trigonometry I)
- (1) AGR 101 (Agricultural Lectures)
- (3) Agriculture elective

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(17)

##### **Second Semester**

- (4) BIOL 109 (Biology of Animals)
- (3) CHM 112 (General Chemistry)
- (3) ENGL 102 (English Composition II)
- (3) MA 154 (Algebra and Trigonometry II)
- (3) Agriculture elective

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(16)

\*There are slight variations in the academic program for students following the various options. Students should see their advisor for further information.

# Community College

The Community College is an arm of the Purdue North Central Campus designed to provide flexibility of service to prospective students, employers, and the public of north central Indiana. One of its purposes is to provide post-high school educational opportunities for those not in a position to meet the entrance requirements of one of the other schools of the University. Students who have a desire to enter one of the other schools can prepare themselves through the Bridge Program of the Community College.

In addition, the Community College provides a place where students not yet committed to a specific program of study can explore, experiment, and mature in their thinking regarding future educational objectives.

The Community College can also serve students who plan to complete their education at other institutions of higher education but wish to make a start toward their educational goals while living at home and attending Purdue North Central.

Exercising its flexibility, the Community College will design courses, programs, and curricula to meet immediate and future specific community needs. In cooperation with governmental and private agencies, current "ladder" educational opportunities can, and are, being made available. The secretarial arts and general business programs are examples.

## BRIDGE PROGRAM

The Community College Bridge Program is designed to serve as a bridge from the student's present academic level to a level which will allow him or her to pursue present Purdue curricula and/or programs at other institutions. It is designed for veterans and other adults who wish to return to college as well as recent high school graduates who need additional skills. The program concentrates on basic skills in three areas, namely:

1. Study skills
2. Communication skills
3. Mathematical skills

Also available is a course that aids the student in understanding himself/herself, his/her strengths and weaknesses, and helps him/her to determine goals best suited to his/her interests, abilities, and values.

Some students require the complete program while others require only portions of it. They take regular credit courses and those Community College Bridge Program courses in areas where they need special help.

## BASIC CURRICULUM

### First Semester

- (3) GNC 160 (Arithmetic and Fundamentals of Algebra)
- (3) GNC 100 (Study Skills)
- (3) GNC 101 (Testing, Self-Analysis and Counseling)
- (3) ENGL 100 (English Composition)
- (1) ENGL 185 (Developmental Reading)

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### Second Semester

- (3) ENGL 101 (English Composition I)
- (3) GNC 260 (Algebra and Fundamentals of Geometry)
- (3) COM 114 (Fundamentals of Speech Communication)
- (3-6) Elective

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(12-15)

## GENERAL BUSINESS

The primary thrust of the associate degree in general business program is to provide students with entry level skills in a variety of business activities at the completion of two years of full-time study. This program is designed to prepare students for employment in the areas of sales, distribution, marketing, accounting, or office supervision. It features a strong core of general business courses with options provided so that the students who are interested in specialized areas can pursue their goals. For example, a student who is interested in accounting will take courses required for a general understanding of business plus specialized courses in accounting under the accounting option in this program. The student is allowed to take twenty-five percent of the degree requirements as electives so that interests in other fields may be pursued. This design allows maximum flexibility for the student. It also provides a broad sampling of courses in general business making it ideal for those students who have not decided on a specialty and want to explore this area as a career.

Students who earn the associate degree in business may continue their work toward a baccalaureate degree by transferring to the supervision program in the School of Technology at Purdue North Central.

## ASSOCIATE DEGREE IN GENERAL BUSINESS

### I. Required Courses

- (3) GNC 127 (Introduction to Business)
  - (3) MA 110 (Business Math I)
  - (3) GNC 261 (Business Math II)
  - (3) ENGL 101 (English Composition I)
- or
- (3) GNC 131 (Written Communications for Business I)
  - (3) ENGL 102 (English Composition II)

- or
- (3) GNT 220 (Technical Report Writing)
  - (3) GNC 126 (Personal Finance)
  - (3) SPV 374 (Elements of Supervision)
  - (3) GNC 420 (Business Law)
  - (3) GNC 421 (Data Processing in Business)
  - (3) COM 114 (Fundamentals of Speech Communication)

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(30)

## **II. Option in Accounting**

- (3) GNC 227 (Principles of Accounting I)
- (3) GNC 228 (Principles of Accounting II)
- (3) GNC 327 (Cost Accounting)
- (3) GNC 427 (Intermediate Accounting I)
- (3) GNC 428 (Intermediate Accounting II)

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## **Option in General Business**

- (3) GNC 325 (Principles of Business Budgeting)
- (3) GNC 329 (Principles of Marketing)
- (3) SPV 376 (Supervision and Personnel Problems)
- (3) SPV 252 (Human Relations in Supervision)
- (3) GNC 224 (Administrative Office Procedures)

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(15)

## **Option in Marketing**

- (3) GNC 328 (Principles of Retailing)
- (3) GNC 329 (Principles of Marketing)
- (3) GNC 429 (Marketing Seminar)
- (3) SPV 252 (Human Relations in Supervision)
- (3) ECON 210 (Principles of Economics)

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(15)

## **III. Electives**

1. Elective – Principles of Tax Preparation (GNC 128) (3 credit hours).
2. Any courses in Group II above not required by student's option.
3. Any courses from general University offerings commensurate with student's abilities and interests selected after consultation with his/her academic advisor.

## **SECRETARIAL ARTS**

The program is envisioned as a "career ladder" whereby students can leave at the end of one year with a certificate and marketable skills. If a student continues for the second year of the program, he/she can earn an Associate of Arts degree in secretarial arts.

The two-semester certificate program consists of 33 semester hours of credit and is highly structured. If a student must start with the beginning courses, there are no electives. If, however, the student already has the basic skills, he/she may elect suitable electives or proceed to the second year of the program upon consultation with the advisor.

For students continuing into the associate degree program, the third semester is fairly well structured but will be tailored to the individual's needs. The fourth semester has only two required courses and allows for nine semester hours of electives. These elective will be selected to meet the interests of the student.

A daytime curriculum for full-time students and an evening curriculum for part-time students are available.

### FRESHMAN YEAR

<b>First Semester</b>	<b>Second Semester</b>
(2) GNC 120 (Seminar on Office Practice)	(3) GNC 221 (Typing II: Advanced)
(3) GNC 121 (Typing I: Basic)	(3) GNC 222 (Stenography II: Intermediate)
(3) GNC 122 (Stenography I: Basic)	(3) GNC 231 (Written Communication for Business II)
(2) GNC 123 (Filing Systems)	(3) COM 114 (Fundamentals of Speech Communication)
(3) GNC 131 (Written Communication for Business I)	(3) GNC 227 (Principles of Accounting I)
(3) GNC 161 (Mathematics of Personal and Business Finances)	(2) GNC 223 (Use of Office Machines)
<hr/> <b>(16)</b>	<hr/> <b>(17)</b>

### SOPHOMORE YEAR

<b>Third Semester</b>	<b>Fourth Semester</b>
(3) GNC 322 (Stenography III: Advanced)	(3) GNC 422 (Specialized Dictation and Transcription)
(3) GNC 127 (Introduction to Business) or IET 104 (Industrial Organization)	(3) GNC 224 (Administrative Office Procedures)
(3) GNC 420 (Business Law) or SPV 268 (Elements of Law)	(9) Electives
<hr/> <b>(15)</b>	<hr/> <b>(15)</b>
(3) GNC 126 (Personal Finance)	
(3) ECON 210 (Principles of Economics)	
<hr/> <b>(15)</b>	

### ADDITIONAL ELECTIVES

- CIS 100, 200, 300
- ECON 211, 222
- ENGL level 200 courses
- GNC 228, 327
- HIST 203, 204, 251, 252
- INDM 302
- POL 101, 141
- PSY 120
- SOC 100
- SPV 240, 252

# **School of Consumer and Family Sciences**

(Formerly the School of Home Economics)

The School of Home Economics of Purdue University has been reorganized and renamed the School of Consumer and Family Sciences. The plan of study is designed to prepare men and women for professional work in the various areas of the field and at the same time to provide a broad general education.

There are four Departments in the School of Consumer and Family Sciences: Consumer Science and Retailing; Child Development and Family Studies; Restaurant, Hotel, and Institutional Management; and Foods and Nutrition.

## **DEPARTMENT OF CONSUMER SCIENCE AND RETAILING**

Major: Social Welfare - Community Service

Major: Fashion Retailing

Major: Apparel Technology

Major: Textile Sciences

Major: Housing

Options:

Residential Design

Residential Interiors

Equipment

General Housing

## **DEPARTMENT OF CHILD DEVELOPMENT AND FAMILY STUDIES**

Major: Nursery-Kindergarten Teaching

Major: Child Development

Major: Family Studies

Major: Social Welfare-Child and Family Services

## **DEPARTMENT OF RESTAURANT, HOTEL, AND INSTITUTIONAL MANAGEMENT**

Major: RHIM (Science - Administrative Dietetics)

Major: RHIM (business)

Associate Degree: Food Service and Lodging Supervision

## **DEPARTMENT OF FOODS AND NUTRITION**

Major: Dietetics

Major: Foods and Nutrition in Business

Major: Food Science

Major: Food, Nutrition and related sciences

Major: Coordinated dietetics program

Interdisciplinary majors, vocational teaching, and general teaching are also offered in the School of Consumer and Family Sciences.

Students interested in preparation for work in the fields mentioned should enroll in the curriculum which follows.

## FRESHMAN YEAR

<b>First Semester</b>	<b>Second Semester</b>
(3) ENGL 101 (English Composition I)	(3) ENGL 102 (English Composition II)
(3) CHM 111 (General Chemistry)	(3) CHM 112 (General Chemistry)
(3) PSY 120 (Elementary Psychology)	(3) SOC 100 (Introductory Sociology)
(3) MA 111, 123, 147, 153, or 223 (according to student's background)	(3) COM 114 (Fundamentals of Speech Communication)
MA 163 (for F&N majors)	(3) Elective
(3) History or political science elective	

(15)

(15)

## SOPHOMORE YEAR

<b>Third Semester</b>	<b>Fourth Semester</b>
(3) BIOL 203 (for F&N majors) BIOL 211 (for all other majors)	(3) BIOL 204 (for F&N majors) BIOL 212 (for all other majors)
(3) ECON 210 (Principles of Economics)	(3) F&N 303 (Essentials of Nutrition)
(3) A&D 355 (Art Appreciation)	(except C S & R majors)
(3) Literature Elective	(3) PSY 235 (Child Psychology)
(3-6) Electives	(except C S & R and RIM majors)
	(6-9) Electives

(15-18)

(15-18)

## Schools of Engineering

Undergraduate instruction in aeronautical engineering, agricultural engineering, chemical engineering, civil engineering, electrical engineering, engineering sciences, industrial engineering, mechanical engineering, materials science, metallurgical engineering, nuclear engineering, and the Division of Interdisciplinary Engineering Studies leads to the degree of Bachelor of Science.\* In order to give the student sufficient time to adjust and to choose the branch of engineering for which he/she is best adapted, the following program of study during the freshman year is common for all engineering curricula. Only those students with adequate background training will be expected to accomplish this in two semesters. Students with inadequate preparation, particularly in mathematics and chemistry, may require an additional semester or summer session to attain sophomore standing.

## COOPERATIVE PROGRAMS WITH INDUSTRY

Five-year cooperative education programs are available in all of the engineering disciplines. Students participating in these programs alternate

\*The degree of Bachelor of Science in Engineering may be awarded to a student who acceptably carries out an interdisciplinary program which cuts across several of the traditional 'school' lines. These programs are administered by the Division of Interdisciplinary Engineering Studies.

The School of Materials Engineering also offers special programs in materials science and engineering.

periods of attendance at the University with periods of engineering experience in selected industries, government agencies, and consulting engineering firms.

While completing the requirements for an engineering degree, students gain a realistic concept of the challenge, working conditions, and rewards of being a member of the engineering profession.

Students planning a graduate program gain experiences with instrumentation and experimental techniques that are a valuable asset for later thesis work. Students often earn nearly all of their educational expenses while working for their cooperative employer.

Upon completion of the program, the students receive the regular Bachelor of Science degree and a certificate indicating their completion of the cooperative education program.

## FRESHMAN ENGINEERING

The Department of Freshman Engineering administers the program of study which leads to admission into one of the Schools of Engineering. The freshman program of study in which the individual student is placed is determined by the College Entrance Examination Board tests and school record data.

The freshman engineering program of study can be completed in one year. There are alternate programs of study available—some for the very well prepared, some for those less well prepared. Certain students have essentially completed their freshman requirements by their high school work, while others may require more than two semesters to prepare themselves for the professional engineering schools. Each beginning engineering student is advised individually by an engineering faculty advisor to insure that the student is properly placed in a program so that the student has a high probability of success. Prospective beginning engineering students are encouraged to visit the engineering faculty advisor at Purdue North Central as early as practicable in their junior or senior year in high school.

### *Typical Freshman Program*

(For those students fully qualified upon entrance)

## FRESHMAN YEAR

### First Semester

- (5) MA 163 (Integrated Calculus and Analytic Geometry I)
- (4) CHM 115 (General Chemistry I)
- (3) ENGL 101 (English Composition I)
- (3) COM 114 (Fundamentals of Speech Communication)
- (2) EG 116 (Engineering Graphics I)

(17)

### Second Semester

- (5) MA 164 (Integrated Calculus and Analytic Geometry II)
- (4) CHM 116 (General Chemistry II)
- (3) ME 270 (Basic Mechanics I — Statics)
- (3) CS 220 (Programming I)
- (3) General Education Elective\*

(18)

\*All engineering students are required to take a minimum of 15 credit hours of general education courses in social sciences, fine arts, and humanities.

## **SOPHOMORE YEAR ENGINEERING PROGRAM**

Since many of the engineering schools require the same 'core' courses in their undergraduate instruction, it is possible for those students who select the schools of Aeronautical, Civil, Industrial, or Mechanical Engineering as well as the Division of Interdisciplinary Engineering Studies to complete their sophomore year at Purdue North Central Campus.

### **SOPHOMORE YEAR CURRICULUM**

#### **Third Semester**

- (4) MA 261 (Multivariate Calculus)
- (4) PHYS 152 (Mechanics and Sound)
- (3) ME 274 (Basic Mechanics II — Dynamics)
- (6) General Education Electives\*

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(17)

#### **Fourth Semester**

- (4) MA 262 (Linear Algebra & Differential Equations)
- (5) PHYS 251 (Heat, Electricity, Optics)
- (3) CE 273 (Mechanics of Materials)
- (6) General Education Electives\*

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(18)

## **School of Humanities, Social Science, and Education**

### **REQUIREMENTS FOR GRADUATION**

The requirements for the baccalaureate degree are listed in the *General Information* bulletin of the University. One of these requirements is the certification by the dean of the appropriate school that the student has completed his/her plan of study.

Attainment of the objectives of the School of Humanities, Social Science, and Education is sought in two ways. One is through the specialized knowledge a student acquires as he/she majors or minors in one or more of the subjects offered by the departments in the school. The other is through the opportunity to gain skill and knowledge in other areas of learning through a combination of requirements and free electives.

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\*All engineering students are required to take a minimum of 15 credit hours of general education courses in social sciences, fine arts, and humanities.

## **DEGREES OFFERED**

Three bachelor's degrees are offered in the School of Humanities, Social Science, and Education: Bachelor of Arts, Bachelor of Science, and the Bachelor of Physical Education.

The program leading to the degree of Bachelor of Arts is followed by students majoring in any of the fields of the humanities or the social sciences, in physical education for women, or in high school teaching in any of these fields. The program leading to the degree of Bachelor of Science is followed by students majoring in audiology and speech sciences and those majoring in psychological sciences. The program leading to the degree of Bachelor of Physical Education is followed by students preparing for coaching and teaching, for admission to a school of physical therapy, or for athletic training.

## **BACHELOR OF ARTS OR BACHELOR OF SCIENCE**

The plan of study for the Bachelor of Arts and the Bachelor of Science degrees in the School of Humanities, Social Science, and Education consists of (1) the general education requirements, (2) the requirements for the major (or "area" or "concentration"), and (3) a sufficient number of elective courses to bring the total credits to 120. All credits must have been earned within the ten years preceding the date of graduation.

## **GENERAL EDUCATION REQUIREMENTS**

The general education requirements specify a minimum involvement in several areas. They have been established in order to insure that each student has the opportunity to acquire skill in the oral and written use of his/her own language, in at least one other foreign language, and in mathematics, and that he/she has had a significant experience in the field of science, in the arts, in the humanities, and in the social sciences.

<b>Areas</b>	<b>Hours</b>
English Composition (ENGL 101-102) .....	6
Interpersonal Communication (Speech) (COM 114) .....	0 or 3
Foreign Language (Three semesters: 101, 102 and 203) .....	9
Mathematics or Logic .....	5 or 6
Humanities .....	12

(At least 3 of the 4 areas listed below must be represented in the selection in Humanities.)

The *areas* are *aesthetics*, *history*, *literature*, and *philosophy*. The approved courses in those *areas* are *aesthetics*: A&D 104, 355, 356, 357, 358, 359, 381, 382, 383, 390, 450, 451, 452, 458; MUS 250, 371, 372, 373, 374, 375; ENGL 376, 405; THTR 201; PEW 112S, 113F, 113M, 113N, 113S, 115G, 115M, 115N, 115R, 140, 141; COM 240, 340, 341, 342.

*History:* HIST 102, 103, 104, 151, 152, any other. *Literature:* ENGL 230, 231, 235, 237, 238, 240, 241, 250, 266, 267, 350, 351, 381, 382, 442, 462, 463, 464, 479; ML any foreign language literature course; COM 312, 513, 514, 517, 519, *Philosophy:* Any course except logic (observe prerequisites).

Social Sciences ..... 9

Any two courses, chosen from: ECON 210 or 219, 211; MGMT 200, 430, 431, 445, 455; POL 101, 141, 230, 300, 301, 321, 350, any course in POL; PSY 120, any course in PSY (observe prerequisites); SOC 100 or 312; ANTH 105, 304; any course in SOC or in ANTH (observe prerequisites).

Natural Sciences ..... 6

Six-hours of courses in biology, chemistry, geosciences, or physics. Can be one course from two different departments as long as the credits total 6)

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<b>Total of core requirements</b>	47 to 51 hours
<b>Minimum required for graduation</b>	126 hours

## CONCENTRATION REQUIREMENTS

There are three patterns of concentration: (1) the *area* (maximum of 45 hours, of which at least 12 are in courses outside the major department), (2) the *concentration* (36 to 45 hours); and (3) the *major* (24 to 35 hours). Each department specifies whether its major must be accompanied by a minor. This major, concentration, or area provides the depth necessary for admission to a graduate school, to meet teacher certification requirements, or for a well-rounded liberal education.

Each student must file his/her choice of major, area, or concentration at the office of the dean, not later than the end of the third semester. He/She may subsequently change his/her major, with permission of the dean.

### B.A. and B.S. Degrees

#### AREAS, CONCENTRATIONS, AND MAJORS

##### Audiology and Speech Sciences

Audiology and Speech Sciences  
Speech and Hearing Therapy

##### Black Studies

##### Communication

Journalism  
Specialty Journalism  
Interpersonal and Public Communication  
Organizational Communication  
Radio-Television-Film

##### Creative Arts

Art History  
Fine Arts  
Industrial Design  
Interior Design  
Visual Design  
(Advertising Design)  
Theatre (Acting, Design, Directing)

##### English

English Major  
Creative Writing Major

**Foreign Language**

French  
German  
Russian  
Spanish

**History**

American History  
European History  
Nonwestern History  
World History

**Media Sciences****Philosophy**

Philosophy  
Religious Studies

**Physical Education—****Women**

Community Health  
Physical Education  
Recreation

**Political Science****Psychology**

Clinical  
Consumer  
Developmental  
Experimental  
Personality and  
Social  
Personnel/  
Organization

**Science and Culture****Sociology**

Anthropology  
Sociology

**MINORS**

Anthropology  
Audiology and Speech Sciences  
Black Studies  
Economics  
English  
French  
German  
History  
Journalism  
Mathematics  
Media Sciences  
Music History and Theory

Philosophy  
Physical Education  
Political Science  
Psychology  
Radio and Television  
Recreation  
Russian  
Sociology  
Spanish  
Interpersonal and Public  
Communication  
Theatre

**PROGRAMS FOR TEACHER CERTIFICATION**  
**Teaching Area Majors**

Arts and Crafts

Physical Education and Health

**Teaching Majors**

Arts and Crafts  
Elementary Education  
Foreign Language  
Junior High School  
Library  
Nursery-Kindergarten  
Physical Education  
Speech and Hearing Therapy  
English  
Foreign Language  
French  
German  
Russian  
Spanish

Health and Safety  
Journalism  
Physical Education and Health  
School Library and Audiovisual  
Services  
Social Studies — two of:  
Economics  
Government  
Sociology  
U.S. History  
World History  
Speech  
Speech and Hearing Therapy

## Teaching Minors

Arts and Crafts	Physical Education (Men)
Biology	Physical Education (Women)
Chemistry	Physics
English	Psychology
Foreign Language	Recreation
French	Social Studies — one of:
German	Economics
Russian	Government
Spanish	Sociology
General Science	U.S. History
Health and Safety	World History
Journalism	
Mathematics	Speech

In teacher preparation, Purdue University has been accredited by the National Commission on Accreditation of Teacher Education, by the North Central Association of Secondary Schools and Colleges, and by the Indiana State Department of Public Instruction. Detailed requirements for any of the areas, majors, or minors may be obtained from the student counseling office of the school. A student who has an educational objective not covered in the list of areas, majors, or minors should consult Dean Earl B. Notestine in the Humanities, Social Science, and Education Counseling Office.

## ELEMENTARY EDUCATION

Preparation in elementary education is offered to a limited number of students chosen on the basis of above-average scholarship, leadership qualities, good mental and physical health, and positive attitude toward children and teaching as a profession. In addition to the core program of all students and the professional program in elementary education, the student will have 24 semester hours for a major in the field of his/her choice or a program of directed electives.

## MASTER OF SCIENCE IN ELEMENTARY EDUCATION (30 hours)

Purdue North Central offers a 30 hour Master of Science in Education program in the elementary education area. This program is designed for those students whose undergraduate training qualifies them for a teacher's license. However, applicants who can meet the general University or Graduate School requirements for admission can usually be accepted conditionally when there are special prerequisites to be met, with full admission granted upon removal of deficiencies.

## BACHELOR OF PHYSICAL EDUCATION

The plan of study for the degree Bachelor of Physical Education consists of:

1. Completion of specific course requirements in the selected curriculum within the two general options, A and B.
2. Completion of at least ten semester hours, with required graduation index, within the ten years preceding the date of graduation.

During the freshman year, a program common to all possible choices, the student selects his/her option under guidance of his/her assigned advisor.

**Option A — Teaching Option.** Within the option, a student may elect coaching with any of a dozen teaching minors, preoccupational therapy, prephysical therapy, athletic training, special education, or any of several other related areas.

**Option B — Nonteaching Option.** Within this option, a student may elect a second area of specialty according to his/her interests and needs. Among the possible second areas are sales, sportscasting, sportswriting, social work, and prephysical therapy.

## School of Management

### MANAGEMENT

As modern society makes increasing use of technology, managers must keep informed to handle their own jobs effectively and to be able to understand and cooperate with the technical specialist. The management curriculum, by including a required technical sequence, enables the student to take advantage of Purdue's excellent resources in science and technology. Through the technical option, students are provided an opportunity to acquire a basic understanding of a specific area in the field of science and technology. Such an objective is essential if the individual is to be capable of working effectively with engineers and scientists in a technically-based industry.

Included in the curriculum is a concentration of mathematics and quantitative methods courses designed to provide the necessary training and background in the use of rigorous analytic techniques applicable to management decisions. This program is designed to help the student develop this kind of broad understanding of the management process.

An administrator cannot be made in the short span of a few months or year. Indeed, most individuals require years of experience to develop the skills, insights, and maturity of judgement which distinguish an effective manager. However, a professional management curriculum can give the student an effective start in his/her development as a manager. In brief, it can help him/her become a more useful member of his/her organization early in his/her career, and it can aid him/her in learning and growing more rapidly in positions of increasing responsibility.

## **ADVANCED STANDING REQUIREMENT**

To help insure reasonable progress, the faculty has adopted the following policy: Before students in general management or economics will be allowed to begin their junior year of studies, they must have earned a 4.50 cumulative grade index (6.00 is A) and must have passed 54 semester hours of course work that includes ECON 251, MGMT 200, and STAT 213. This policy affects all new students in general management or economics that enter the school after May 14, 1977.

## **INDUSTRIAL MANAGEMENT**

### **FRESHMAN**

1	ENGL 101 Comp 1	MA 161 Calculus 1 Note A	Gen Chem or Gen Phys 1 Note B	COM 114 Fund of Speech
2	ECON 210 Economic Principles	ENGL 102 Comp 2	MA 162 Calculus 2	Gen Chem or Gen Phys 2 General Ed 1 Note C

### **SOPHOMORE**

3	ECON 251 Micro- economics	MGMT 200 Intro to Accounting	MA 261 Multivariate Calculus	CS 210 Intro to Data Processing	General Ed 1
4	ECON 352 Macro- economics	MGMT 201 Cost Accounting		Minor 1 Note D	Business Comp Elective

### **Notes to Chart**

- A. **Mathematics:** Alternate sequence of MA 155, 156, 157, and 261 may be selected. (MA 155 is noncredit.)
- B. **Chemistry-Physics:** Completion of any two courses (eight hours minimum) taken from CHM 115, 116, PHYS 152, 251, 220, 221.
- C. **General Education:** Requirements consist of: Group 1 — completing one two-course sequence; Group 2 — completing one course from an additional area (to include psychology unless selected above). The areas for selection are communication,\* history, literature, modern language, philosophy, political science, psychology, and sociology or anthropology.\*
- D. **Applied Science Minor:** A minimum of 15 hours is necessary. Areas are computer sciences, economics honors, engineering, quantitative methods, or science (biology, chemistry, geosciences, mathematics, or physics).

\*Cannot be used as General Education Group 1.

## GENERAL MANAGEMENT

FRESHMAN					
1	COM 114 Fund of Speech	Lab Sci 1 Note A	MA 153 Algebra	ENGL 101 Comp 1	General Ed 1 Note B
2	ECON 210 Economic Principles	Lab Sci 2	STAT 213 Probability	ENGL 102 Comp 2	General Ed 1 Elective
SOPHOMORE					
3	ECON 251 Micro-economics	MGMT 200 Intro to Accounting	MA 214 Linear Alg & Prog	CS 210 Intro to Data Processing	General Ed 1
4	ECON 252 Macro-finance	MGMT 201 Cost Accounting	MA 220 Business Calculus	Business Comp	General Ed 1 Elective

### Notes to Chart

- A. **Laboratory Science:** Completion of any two semesters (six hours minimum) in biology, chemistry, geosciences, or physics.
- B. **General Education:** Requirements consist of: Group 1 — completing one four-course sequence; and Groups 2 and 3 — completing two two-course sequences (to include psychology unless selected above). The areas for selection are communication,\* history, literature, modern language, philosophy, political science, psychology, and sociology or anthropology.\*

## ECONOMICS

In contrast to the technically-based internal approach utilized in the management program, the economics curriculum provides a coordinated series of courses in the field of economics and business as a means of developing a broad fundamental background in business organizations and the economic environment in which a business operates. The program includes four two-semester sequences covering economic principles, aggregate economics, statistics, and accounting, plus courses in business law and managerial economics. In addition, three related courses in economics and business of special interest to the student make possible a degree of specialization. Elective hours permit either further concentration in economics or enrichment in the general education area.

Business leaders, employment officials, and schools for advanced study, such as law schools, have endorsed this type of economics and business education with liberal arts background. The program satisfies the need of future junior business executives for a broad, liberal-arts-oriented base on which to build specific training and experience received on the job.

\*Cannot be used as General Education Group 1.

# ADVANCED STANDING REQUIREMENT

To help insure reasonable progress, the faculty has adopted the following policy: Before students in general management or economics will be allowed to begin their junior year of studies, they must have earned a 4.50 cumulative grade index (6.00 is A) and must have passed 54 semester hours of course work that includes ECON 251, MGMT 200, and STAT 213. This policy affects all new students in general management or economics that enter the school after May 14, 1977.

## ECONOMICS

### FRESHMAN

1	COM 114 Fund of Speech	Lab Sci 1 Note A	MA 151, 153 Algebra	ENGL 101 Comp 1	Gen Ed 1 Note B
2	ECON 210 Economic Principles	Lab Sci 2	STAT 213 Probability	ENGL 102 Comp 2	Gen Ed 1 Elective

### SOPHOMORE

3	ECON 251 Micro-economics	MGMT 200 Intro to Accounting	MA 220 Business Calculus	CS 210 Intro to Data Proc	Gen Ed 1
4	ECON 352 Macro-finance	ECON Elect 1 Note C	MGMT 302 Business Stat	Business Comp	Gen Ed 1 Elective

### Notes to Chart

- A. **Laboratory Science:** Completion of any two semesters (six hours minimum) in the following subject(s): biology, chemistry, geosciences, or physics.
- B. **General Education:** Requirements consist of Group 1 — completing one four course sequence; Groups 2 and 3 — completing two two-course sequences (to include psychology unless selected above); and Group 4 — completing one course in one other area (to include PHIL 150 unless selected above). The areas for selection are communication,\* fine arts\* (art, music, or theatre) or general studies,\* history, literature, modern language, philosophy, political science, psychology, and sociology or anthropology.\*
- C. **Economics Electives:** Consists of five courses. Three of these courses must be selected from the following: ECON 305, 355, 360, 365, 370, 436, 456, 461, 466, 471, 530, 535, 560, 570. The remaining two may be any other economics courses listed in the catalog except: ECON 211, 217, 219, 415, 417, 511, 512, 513, 519.

\*Cannot be used as General Education Group 1.

# School of Science

The School of Science consists of the departments of Biological Sciences, Chemistry, Physics, Computer Sciences, Statistics, Geosciences, and the Division of Mathematical Sciences.

The School of Science offers a broad training which prepares students for a variety of careers.

Curricula leading to two degrees, Bachelor of Science and Bachelor of Science in Chemistry, are offered by the School of Science.

Specific details of these curricula and the requirements for the degrees are listed in the School of Science catalog.

## BACHELOR OF SCIENCE DEGREE

### General Education Requirements

The following general requirements for the B.S. degree in the School of Science are supplemented by requirements of the department of the student's major. Particular attention is drawn to modification allowed in the curricula for prospective high school teachers (as indicated below).

1. A total of 124 semester hours: An average of 15½ hours per semester is sufficient to accumulate 124 hours in eight semesters. Students with a graduation index less than 5.0 are advised not to take more than 17 hours in any one semester.
2. English composition: One year of English composition, or ENGL 101 entered by achievement examination and completed with a grade of C or better.
3. Foreign language: Pass a fourth-semester college-level course in a foreign language, or pass an equivalent proficiency examination. In high school teaching curricula, the student must pass a second-semester college-level course in a foreign language or pass a proficiency examination.
4. Humanities, social science, and behavioral sciences: The minimum requirement is 18 hours, but it is strongly recommended that the student take more than a minimal program. Six hours must be chosen from each of two of the following areas: (a) literature, philosophy; (b) history, political science; and (c) economics, sociology, psychology. In addition, a satisfactory two-course sequence must be chosen from one of the above areas.

5. Mathematics: At least 11 hours.
6. Science: Each student must take at least four courses in laboratory science (biology, chemistry, geology, physics) *outside his/her major area*. It is preferable that he/she take two-course sequences in each of two sciences; in no case shall he/she satisfy this requirement by courses drawn from more than two sciences.

## BIOLOGICAL SCIENCES

The Department of Biological Sciences offers four programs leading to the Bachelor of Science degree. These are:

- 1. Basic Biology Program.** This program is designed for students interested in any of the areas of basic biology. By choosing an appropriate plan of study within this program a student can specialize in botany, microbiology, zoology, or general biology, biochemistry and molecular biology, biomathematics, biophysics, ecology, or neurology and behavior, either with the B.S. as a terminal degree or in preparation for graduate work.
- 2. Premedical, Predental and Preveterinary Program.** The plans of study in this program differ from those in the preceding program only in requiring fewer credits in biology and in providing an opportunity for some students to fulfill their requirements for the B.S. by taking all required courses (99 to 103 credits, depending on chemistry and mathematics sequences selected) in six semesters and then completing the first year at an accredited medical, dental or veterinary school.
- 3. Medical Technology Program.** The plans of study in this program include six semesters of work (96 credit hours) at Purdue University followed by a full year of work at an approved school of medical technology and a successful Board of Registry examination.
- 4. Biology Teaching Program.** The plans of study in this program are designed for prospective high school teachers in biology. Such students should note that, in addition to meeting the requirements for the degree, it is essential for them to complete the requirements for certification imposed by the state in which they expect to teach.

Each program consists of (1) the core courses in biology; (2) certain specified courses in chemistry, physics, and mathematics; (3) in some cases, additional elective courses in biology; (4) the School of Science course requirements; and (5) for prospective teachers, certain education courses. In the medical technology program, three of the core biology courses are replaced by other courses in biology, one of which must be animal physiology. The first two years of each program are offered at the North Central Campus.

## **Basic Biology, Premedicine, Predentistry, Preveterinary, Medical Technology, and Biological Teaching**

### **FRESHMAN YEAR**

<b>First Semester</b>	<b>Second Semester</b>
(2) BIOL 121 (Biology I: Diversity, Ecology, and Behavior)	(2) BIOL 131 (Biology II: Development, Structure, and Function of Organisms)
(2) BIOL 122 (Laboratory in Biology I)	(2) BIOL 132 (Laboratory in Biology II)
(4) CHEM 115 (General Chemistry)	(4) CHEM 116 (General Chemistry)
(3) ENGL 101 (English Composition I)	(3) ENGL 102 (English Composition II)
(3) MA 223 (Introductory Analysis I) or (5) MA 163 (Integrated Calculus and Analytic Geometry I)	(3) MA 224 (Introductory Analysis II) or (5) MA 164 (Integrated Calculus and Analytic Geometry II)
(3) Foreign language	(3) Foreign language

(17-19)

(17-19)

## **CHEMISTRY**

Students electing chemistry as a major may select either of two degree programs, depending upon their interest. These are:

### **Bachelor of Science in Chemistry Degree**

This degree program is designed primarily for students planning to go on to graduate study or preparing for an industrial career as a chemist. It is planned to fulfill the recommendations of the Committee on Professional Training of the American Chemical Society; graduates who follow this program will be certified to the American Chemical Society as having fulfilled recommended requirements.

Students wishing to graduate with the Bachelor of Science in Chemistry should plan to transfer to the West Lafayette Campus for their sophomore and subsequent years.

### **Bachelor of Science Degree**

(Chemistry major or chemistry teaching major)

This degree program contains the same basic courses in chemistry as the B.S. in Chemistry degree program but has fewer requirements and thus permits more electives from other areas. It is recommended that students build a program of study from another area to complement this basic but minimal chemistry program. It is particularly suited for students preparing for careers as chemistry teachers, geochemists, biologists, medical doctors, scientific librarians, science writers, chemical salesmen, chemical patent attorneys, or other careers which require a less highly specialized training in chemistry than is offered for the B.S. in Chemistry degree.

The chemistry, mathematics, and physics courses in this degree program meet the Indiana certification requirements for a secondary-school teaching major in chemistry.

### FRESHMAN YEAR

<b>First Semester</b>	<b>Second Semester</b>
(4) CHM 115 (General Chemistry)	(4) CHM 116 (General Chemistry)
(5) MA 163 (Integrated Calculus and Analytic Geometry I)	(5) MA 164 (Integrated Calculus and Analytic Geometry II)
(3) ENGL 101 (English Composition I)	(3) ENGL 102 (English Composition II)
(3) GER 101 (First Course in German)	(3) GER 102 (Second Course in German)
<hr/> <hr/> (15)	<hr/> <hr/> (15)

### SOPHOMORE YEAR

<b>Third Semester</b>	<b>Fourth Semester</b>
(3) CHM 255 (Organic Chemistry)	(3) CHM 256 (Organic Chemistry)
(1) CHM 255L (Organic Chemistry Laboratory)	(1) CHM 256L (Organic Chemistry Laboratory)
(4) MA 261 (Multivariate Calculus)	(4) MA 262 (Linear Algebra and Differential Equations)
(4) PHYS 152 (Mechanics)	(5) PHYS 251 (Heat, Electricity, and Optics)
(3) GER 203 (Third Course in German)	(3) GER 244 (Fourth Course in Scientific German)
<hr/> <hr/> (15)	<hr/> <hr/> (16)

## MATHEMATICS

### FRESHMAN YEAR

<b>First Semester</b>	<b>Second Semester</b>
(5) MA 163 (Integrated Calculus & Analytic Geometry I)	(5) MA 164 (Integrated Calculus & Analytic Geometry II)
(3) ENGL 101 (English Composition I)	(3) ENGL 102 (English Composition II)
(3) Foreign language (German preferred)	(3) Foreign language
(4) CHM 115 (General Chemistry)	(4) CHM 116 (General Chemistry)
(3) Elective	(3) Elective
<hr/> <hr/> (18)	<hr/> <hr/> (18)

## SOPHOMORE YEAR

### Third Semester

- (4) MA 261 (Multivariate Calculus)
- (3) Foreign language
- (4) Science elective
- (3) Humanities electives
- (3) CS 220 (Programming I)

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(17)

### Fourth Semester

- (3) MA 351 (Elementary Linear Algebra)
- (3) Foreign language
- (4) Science elective
- (3) MA 361 (Advanced Calculus and Differential Equations)
- (3) Elective

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(16)

## PHYSICS

## FRESHMAN YEAR

### First Semester

- (3) ENGL 101 (English Composition I)
- (4) CHM 115 (General Chemistry)
- (5) MA 163 (Integrated Calculus & Analytic Geometry I)
- (3) Foreign language

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(15)

### Second Semester

- (3) ENGL 102 (English Composition II)
- (4) CHM 116 (General Chemistry)
- (5) MA 164 (Integrated Calculus & Analytic Geometry II)
- (3) Foreign language

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(15)

## SOPHOMORE YEAR

### Third Semester

- (4) MA 261 (Multivariate Calculus)
- (4) PHYS 152 (Mechanics)
- (3) Foreign Language
- (3) Elective

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(14)

### Fourth Semester

- (4) MA 262 (Linear Algebra and Differential Equations)
- (5) PHYS 251 (Heat, Electricity, and Optics)
- (3) Foreign Language
- (3) Elective

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(15)

## PREPHARMACY

Students wishing to prepare for the profession of pharmacy may complete one year on this campus registered in the School of Science. Application for

transfer to the School of Pharmacy and Pharmacal Sciences (West Lafayette Campus) should be filed with the prepharmacy advisor *before January 1 of the final spring semester on this campus*. Students who, for any reason, do not transfer to the School of Pharmacy and Pharmacal Sciences may apply for transfer to any other school of the University or remain in the School of Science, with a change of educational objective.

## ELECTIVES

Fifteen credit hours must be selected from two general areas of study: (1) humanities and (2) social studies and behavioral sciences. A minimum of six credit hours must be taken in each area. The 15 elective credit hours must be completed during the first six semesters. ECON 210 shall be counted toward the satisfaction of this requirement. Departments and courses which will meet the requirement for these restricted electives are the following:

### Humanities

Communication (all courses numbered 160 and above)  
Creative Arts (all courses)  
English (all courses numbered 200 and above)  
Foreign Languages (all courses)  
Philosophy (all courses)

### Social Studies and Behavioral Sciences

Economics (all courses)  
History (all courses)  
Political Science (all courses)  
Sociology (all courses)

## FRESHMAN YEAR

### First Semester

- (3) MA 223 (Introductory Analysis I)
  - (4) CHM 115 (General Chemistry)
  - (3) Elective
  - (3) ENGL 101 (English Composition I)
  - (4) BIOL 108 (Biology of Plants)
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- (17)

### Second Semester

- (3) MA 224 (Introductory Analysis II)
  - (4) CHM 116 (General Chemistry)
  - (3) ENGL 102 (English Composition II)
  - (4) BIOL 109 (Biology of Animals)
  - (3) Elective
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- (17)

## School of Technology

## THE APPLIED SCIENCES

The University has a number of two-year undergraduate programs leading to the degree of Associate in Applied Science.

The associate degree is awarded to each student who satisfactorily completes the program of study in one of the curricula. Graduates can expect to be immediately employable in industry. Those who have received the associate degree may be admitted to the two-year curricula designed to lead to a Bachelor of Science degree in technology, industrial education, or industrial supervision.

## ASSOCIATE IN APPLIED SCIENCE DEGREE

Science and technology range from extremely simple to highly complex and abstract activities. At one extreme are the "professionals"; at the other, the mechanics, draftsmen, and service personnel. Within this broad spectrum, the educational backgrounds include doctor's degrees, master's degrees, bachelor's degrees, and associate's degrees at the University level, as well as certificates and diplomas from other post-high school educational and training institutions.

Frequently, the degree level is indicative of the job level. For example, in the medical profession, job titles include physicians (doctor's degree), medical technologists (bachelor's degree), and nurses (associate degree) at the University level as well as the practical nurse, hospital technician, and operating room technician (diploma) offered at other post-high school educational institutions.

The Associate in Applied Science degree offered by Purdue's School of Technology is awarded after two years of University-level study in an applied scientific field. Graduates of such programs are called technicians.

A technician is an employee whose job requires applied knowledge and applied technical skills. The technician's work is somewhat akin to that of the professional, but more narrow in scope. The job requirements normally include those manipulative skills necessary to perform the technical tasks. These fields require considerable technical knowledge of the materials and processes involved as well as knowing how to apply the principles of physical and biological sciences. In general, instruments are used, in contrast to tools. The technician's contribution is mainly through mental effort in conjunction with application of skills. In many organizations a technician is not limited to a single position but is permitted to move vertically in the organization to higher levels of responsibilities. This, of course, is dependent upon the individual's capability and willingness to continue his/her education.

### Developed With Industrial Cooperation

Various courses are offered to cover the basic knowledge and practices of present-day industry. Industrial leaders have been consulted to learn the kind of specific technical information required by persons who take jobs in industry. Many members of the instructional staff are drawn from local industries, but course administration, teaching material, and standards of instruction are under the direction of the departments involved.

# ARCHITECTURAL TECHNOLOGY

This program prepares students for employment with architects, contractors, building materials suppliers, and various governmental agencies. Graduates accept positions as architectural draftsmen, estimators, planning technicians, field inspectors, and sales representatives. They may also continue their education toward a Bachelor of Science degree in Building Construction and Contracting.

The drafting courses begin with basic fundamentals and extend into wood frame systems, intermediate-sized buildings, and multibuilding complexes. Other drawing courses include presentation techniques.

Materials, surveying, specifications, estimating, mechanical equipment and other courses related to construction are also a part of the program.

Related courses in the areas of mathematics, physical sciences, and humanities are essential in the development of a person who wishes to advance in the field of construction.

Students contemplating future transfer to an accredited architectural school should contact the Department of Building Construction and Contracting.

## FRESHMAN YEAR

### First Semester

- (3) EG 110 (Drafting Fundamentals)
- (1) BC 100 (Intro. To Construction)
- (3) CET 104 (Surveying)
- (3) MA 147 (Algebra & Trig. I)
- (3) ENGL 101 (English Comp. I)
- (3) COM 114 (Speech)

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(16)

### Second Semester

- (3) ART 150 (Architectural Construction I)
- (2) BC 170 (Plans & Specs.)
- (2) CET 208 (Route Surveying)
- (3) MA 148 (Algebra & Trig. II)
- (3) CET 160 (Statics)
- (3) GNT 220 (Technical Report Writing)

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(16)

### Summer

- (1) BC 190 (Construction Work Experience)  
or
- (1) BC 195 (Construction Observation)

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(1)

## SOPHOMORE YEAR

### Third Semester

- (3) ART 222 (Architectural Construction II)
- (3) ART 221 (Architectural Presentation)
- (3) Technical Elective
- (3) CET 260 (Strength of Materials)
- (3) ECON 210 (Economics)
- (3) Business Elective

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### Fourth Semester

- (3) ART 224 (Architectural Construction III)
- (3) BC 230 (Mechanical & Electrical Equipment)
- (3) BC 270 (Estimating)
- (3) CET 280 (Structural Calculations)
- (4) PHYS 220 (Physics)

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# BUILDING CONSTRUCTION AND CONTRACTING

The Department of Building Construction and Contracting offers a program that prepares students to become professional contractors – managers of the construction process. The program emphasizes the management of the men, money, machines, and materials with which structures are built. It stresses production rather than design, and management skills rather than craft skills.

Graduates are prepared to work for all types of contractors: residential, commercial, industrial, highway, heavy, mechanical, electrical, and speciality. Graduates are also prepared for work in both the field and the office. Experienced graduates fill positions such as job superintendent, estimator, scheduler, cost analyst, project manager, and company president.

In the first two years, emphasis is placed on the development of the job skills needed by contractors, including plan reading, estimating, surveying, drafting, and accounting. At the end of two years, the student has the option of obtaining an A.A.S. degree and entering the work force or continuing for a B.S. degree.

## FRESHMAN YEAR

### First Semester

- (1) BC 100 (Introduction to Construction)
- (3) BC 130 (Structural Systems)
- (2) BC 170 (Plans and Specifications)
- (5) MA 150 (Mathematics for Technology)
- (3) ENGL 101 (English Composition I)
- (3) SPV 252 (Human Relations in Supervision)

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(17)

### Second Semester

- (2) BC 112 (Elementary Surveying)
- (3) BC 160 (Statics)
- (3) EG 221 (Basic Architectural Drawing)
- (3) MA 221 (Calculus for Technology I)
- (3) CS 200 (Computer Applications in Technology)
- (3) COM 114 (Fundamentals of Speech Communications)

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(17)

### Summer

- (1) BC 190 (Construction Experience I)\*

## SOPHOMORE YEAR

### Third Semester

- (2) BC 212 (Construction Surveying)
- (3) BC 230 (Mechanical and Electrical Systems)
- (3) BC 260 (Strength of Materials)
- (3) ECON 210 (Principles of Economics)
- (4) PHYS 218 (General Physics)
- (3) Elective

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(18)

### Fourth Semester

- (3) BC 265 (Temporary Structures)
- (3) BC 270 (Estimating)
- (3) MGMT 200 (Introductory Accounting)
- (3) SPV 374 (Elements of Supervision)
- (3) Math/science elective

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\*A three-credit-hour technical elective may be substituted for each summer of work experience.

# CIVIL ENGINEERING TECHNOLOGY

This program is designed to prepare students for employment with land surveyors, highway departments, contractors, city engineering offices, and engineering consultants, as well as with other specializations of civil engineering. Graduates accept positions as topographers, structural draftsmen, steel and concrete laboratory technicians, and as instrument men doing land surveys and highway surveys. With additional experience they may acquire positions as supervisors, or chiefs of parties, in a variety of work associated with civil engineering. They may also continue their education by pursuing a Bachelor of Science degree in Building Construction and Contracting.

The surveying courses in this program begin with basic operation and use of equipment and progress through route surveying, land surveying, and subdivision.

Other groups of courses consider structural systems, materials, strength of materials, and specifications and estimating.

To broaden the technician's ability to communicate in words and figures, courses in mathematics, physical science, and communicative skills are required.

## FRESHMAN YEAR

### First Semester

- (3) EG 110 (Drafting Fundamentals)
- (1) BC 100 (Intro. to Construction)
- (3) CET 104 (Surveying)
- (5) MA 150 (Mathematics for Technology)
- (3) ENGL 101 (English Comp. I)

### Second Semester

- (3) ART 150 (Architectural Construction I)
- (2) BC 170 (Plans & Specs.)
- (2) CET 208 (Route Surveying)
- (3) CET 160 (Statics)
- (3) GNT 220 (Tech. Report Writing)
- (3) COM 114 (Speech)

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(16)

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(16)

### Summer

- (1) BC 190 (Construction Work Experience) or
- (1) BC 195 (Construction Observation)

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(1)

## SOPHOMORE YEAR

### Third Semester

- (3) CET 260 (Strength of Materials)
- (3) CET 209 (Subdivision)
- (3) CET 253 (Hydraulics & Drainage)
- (3) ECON 210 (Economics)
- (3) MA 223 (Calculus)
- (3) Business Elective

### Fourth Semester

- (3) BC 270 (Estimating)
- (3) CET 280 (Structural Calc.)
- (4) PHYS 220 (Physics)
- (3) Technical Elective
- (3) Math/Science Elective

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## **COMPUTER AND INFORMATION SYSTEMS (Computer Technology)**

This two-year associate degree program is designed to produce a graduate competent in computer programming in the commercial area. It prepares a person to perform the following functions: analyze problems, design flowcharts, write computer programs, verify programs, and evaluate and modify existing programs. It also familiarizes him/her with procedures common in this area of specialization.

Graduates may continue their education by pursuing a Bachelor of Science degree with a major in computer technology.

### **FRESHMAN YEAR**

<b>First Semester</b>	<b>Second Semester</b>
(3) CIS 116 (Introduction to Data Processing I)	(3) CIS 117 (Introduction to Data Processing II)
(3) ENGL 101 (English Composition I)	(3) CIS 122 (Computer Mathematics)
(3) MA 147 (Algebra & Trigonometry for Technology I)*	(3) MA 148 (Algebra & Trigonometry for Technology II)*
(3) COM 114 (Fundamentals of Speech Communication)	(3) ECON 210 (Principles of Economics)
(3) Elective	(3) GNT 220 (Technical Report Writing)
	(3) Elective
(15)	(18)

### **SOPHOMORE YEAR**

<b>Third Semester</b>	<b>Fourth Semester</b>
(4) CIS 133 (Assembly Language Programming I)	(4) CIS 134 (Assembly Language Programming II)
(3) CIS 261 (RPG Programming)	(3) CIS 254 (Commercial Systems Applications)
(3) CIS 265 (Cobol Programming)	(3) CIS 264 (Fortran Programming)
(3) STAT 301 (Elementary Statistical Methods I)	(3) CIS 286 (Computer Operating Systems)
(3) MGMT 200 (Introductory Accounting I)	(2) CIS 290 (Computer Project)
	(3) MGMT 201 (Introductory Accounting II)
(16)	(18)

## **ELECTRICAL ENGINEERING TECHNOLOGY**

The electrical engineering technology program is a combination of courses in electrical engineering technology, mathematics, science, and general academic subjects that lead to the degree of Associate in Applied Science. The program is designed to prepare students for employment as electronic technicians in research laboratories, electronic industries, and in any industry that uses electrical power or electronic controls.

\*Superior students may take MA 150 or other higher level course(s) as a substitute for these.

The basic curriculum will provide the student with sufficient education to find employment in the fields of communications electronics, industrial electronics, microwaves, military electronics, computer electronics, automation, electronic servicing, television, electrical power, aviation electronics, and others. Specialization in these areas is provided by technical elective courses in the second year of the program.

The duties of the electronic technician could be: construction, testing, and troubleshooting of experimental circuits in research laboratories; installation, maintenance, troubleshooting, operation, and testing of electrical and electronic equipment in industries; sales and service of electronic equipment, etc.

Electronic technicians have the following job classifications: research or laboratory technician, electronics engineering technician, engineering development technician, product design technician, systems test technician, field service technician, production technician, maintenance technician, instrument technician, inspectors, electronic specialist, radio operator, and many others.

After experience and continued technician growth, graduates hold such positions as junior engineer, sales engineer, field engineer, customer service engineer, applications engineer, supervisor, manager, foreman, contractor, electrical estimator, broadcast engineer, etc.

Students who obtain the degree of Associate in Applied Science are eligible for consideration for admission to curricula leading to the degree of Bachelor of Science. Approximately two additional years of study are necessary to complete the requirements for this degree.

## FRESHMAN YEAR

### First Semester

- (4) EET 102 (Electrical Circuits I)
- (3) EET 104 (Electronics I)
- (3) MA 147 (Algebra and Trigonometry for Technology I)
- (3) ENGL 101 (English Composition I)
- (3) Non-Technical Elective (Humanities)

### Second Semester

- (4) EET 152 (Electrical Circuits II)
- (4) EET 154 (Electronics II)
- (3) MA 148 (Algebra and Trigonometry for Technology II)
- (3) COM 114 (Fundamentals of Speech Communication)
- (3) EG 110 (Drafting Fundamentals)

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## SOPHOMORE YEAR

### Third Semester

- (4) EET 204 (Electronics III)
- (4) EET 212 (Electrical Power and Machinery)
- (4) EET 254 (Digital Fundamentals)
- (3) MA 223 (Introductory Analysis I)

### Fourth Semester

- (4) EET 317 (Digital Circuits and Subsystems)
- (4) EET Technical Elective
- (4) PHYS 220 (General Physics)
- (3) MA 224 (Introductory Analysis II)
- (3) Science or Math Elective

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# INDUSTRIAL ENGINEERING TECHNOLOGY

This major field of specialization is designed to develop technicians to support the problem-solving and decision-making functions in management and to prepare for planning and control, work method analysis, work measurements, quality assurance and controls, and systems and procedures analysis. Practical applications of production-oriented operations research techniques, data processing and computer programming fundamentals are stressed.

The industrial engineering technician is often initially employed in the time study, quality control, production control, or plant layout department. As he/she gains experience, he/she may advance within the department, directly assisting a professional industrial engineer, or he/she may become a production supervisor. This broad technical background, together with the human relations background and a proficiency in engineering methods and mathematics, enables the industrial engineering technician to take advantage of opportunities for advancement in many directions.

## FRESHMAN YEAR

### First Semester

- (3) EG 110 (Drafting Fundamentals)
- (3) IET 104 (Industrial Organization)
- (5) MA 150 (Mathematics for Technology)
- (1) MET 160 (Applied Engineering Computations)
- (4) PHYS 220 (General Physics)

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### Second Semester

- (3) English\*
- (3) IET 204 (Techniques of Maintaining Quality)
- (3) CIS 200 (Computer Programming Fundamentals)
- (3) STAT 301 (Elementary Statistical Methods)
- (2) MET 335 (Basic Machining)
- (4) PHYS 221 (General Physics)

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## SOPHOMORE YEAR

### Third Semester

- (3) ECON 210 (Principles of Economics)
- (3) IET 224 (Production Planning and Control)
- (3) IET 262 (Motion Study and Work Methods)
- (3) SPV 252 (Human Relations)
- (2) IET 220 (Critical Path Analysis)
- (3) Technical elective

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### Fourth Semester

- (3) GNT 220 (Technical Report Writing)
- (3) IET 250 (Fundamentals of Production Cost Analysis)
- (3) IET 266 (Work Measurement and Incentives)
- (3) COM 114 (Fundamentals of Speech Communication)
- (4-6) Technical electives

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(16-18)

\*Students will be counseled into ENGL 100 and 286, 100, 101 or 102 depending on the individual student's needs.

## **TECHNICAL ELECTIVES**

### **Methods Improvement Option**

- (3) IET 120 (Systems and Procedures)
- (2) IET 272 (Job Evaluation)
- (2) IET 296 (Industrial Technology Case Problems)

### **Material Handling Option**

- (3) IET 268 (Plant Layout)
- (3) IET 312 (Materials Handling)
- (2) IET 296 (Industrial Technology Case Problems)

### **Supervision Option**

- (3) SPV 240 (Labor Relations Problems)
- (3) SPV 331 (Safety)
- (3) SPV 374 (Supervision)
- (3) SPV 350 (Applied Creativity for Business and Industry)

## **MECHANICAL ENGINEERING TECHNOLOGY**

This program of study is designed to prepare students to take employment in industries requiring services of drafting and design of a mechanical nature.

Emphasis is placed on product and tool design, mechanical maintenance, testing, inspection, and the selection of methods for efficient and economical production.

Also included are courses dealing with fundamentals of industrial management and with some of the historical, economic, and human relations aspects of our American industrial life, all related to the individual.

Graduates of this program accept jobs as laboratory technicians, engineering assistants, detailers, draftsmen, tool maintenance men, layout men, inspectors, and machine and tool salesmen. With additional experience students may aspire to positions as industrial supervisors, machine and tool designers, tool buyers, production expeditors, and cost estimators.

A cooperative work program with industry may be made available to the student, to be worked out on an individual student basis.

### **FRESHMAN YEAR**

#### **First Semester**

- (1) MET 160 (Applied Engineering Computations)
- (2) MET 180 (Materials and Processes)
- (3) EG 110 (Drafting Fundamentals)
- (3) MA 147 (Algebra & Trigonometry for Technology I)
- (3) ENGL 101 (English Composition I)
- (3) SPV 252 (Human Relations in Supervision)

#### **Second Semester**

- (3) MET 102 (Production Drawing)
- (3) CET 160 (Statics)
- (2) MET 256 (Material Fabrication)
- (3) IET 104 (Industrial Organization)
- (3) MA 148 (Algebra & Trigonometry for Technology II)
- (3) GNT 220 (Technical Report Writing)

## SOPHOMORE YEAR

<b>Third Semester</b>	<b>Fourth Semester</b>
(3) CET 260 (Strength of Materials)	(3) MET 214 (Machine Elements)
(2) MET 213 (Dynamics)	(3) MET 230 (Fluid Power)
(3) MET 220 (Heat/Power)	(4) PHYS 221 (General Physics II)
(3) MA 223 (Introductory Analysis I)	(3) MA 224 (Introductory Analysis II)
(3) COM 114 (Fundamentals of Speech Communication)	(3) CS 220 (Programming I)
(3) Technical Elective	

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## NURSING

This program of nursing education provides a means of correlating the philosophy and standards of nursing education with those of general education. The overall standards and policies of the University apply to the program in nursing as they do to the other educational programs within the University. The associate degree program is designed to fulfill the educational needs of qualified high school graduates, in the upper 1/2 of their graduating class, who want to study in a multi-purpose collegiate institution where they share the responsibilities, privileges, intellectual and social experiences with all other students. Clinical practice experiences are obtained in nearby cooperating health agencies. The University nursing faculty selects, supervises, and evaluates all learning experiences.

Graduates are prepared for beginning level of nursing practice in varied health settings.

Graduates of the associate degree program in nursing are eligible for state examinations for licensure as registered nurses.

### Entrance Requirements:

1. Graduation from an accredited school.
2. Satisfactory completion of 15 units of secondary work distributed as follows:

English .....	3 units
Social Sciences .....	1 unit
*Algebra and Geometry .....	2 units
*Laboratory Science .....	1 unit
Additional English, Language, Mathematics, Science or Social Studies .....	3 units
Other high school subjects .....	5 units
<b>Total .....</b>	<b>15 units</b>

3. Must be in the upper 1/2 of high school graduating class.
4. Must take College Board SAT if student has graduated from high school within the last three years.

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\*Cannot be omitted or substituted.

5. A personal interview with a member of the nursing faculty is required.
6. Satisfactory physical examination, including specified immunizations and test, and a chest X-ray prior to admission.
7. Must be an American citizen or have declared legal intent to become a citizen or hold a permanent visa.

#### **Additional Information:**

The following are requirements used for the admission, progression, retention, promotion and graduation of students in the nursing program.

1. A "C" or better must be obtained in all nursing courses NUR in order to be a candidate for graduation.
2. Students must have a "C" or better in NUR 115 or its equivalent before proceeding to NUR 116.
3. Students must have a "C" or better in NUR 116, and PCOL 201 or their equivalent before proceeding to NUR 224, NUR 225, and/or NUR 240.
4. Students failing to have a "C" or better in any nursing course may repeat that course once. A second failure to earn a "C" or better for the nursing course will necessitate a review of the student's records by a committee of the nursing faculty to determine retention of the student in the nursing curriculum.

#### **FRESHMAN YEAR**

##### **First Semester**

- (3) BIOL 203 (Biology of Man and Laboratory in Human Biology)
- (3) CHEM 119 (General Chemistry)
- (3) PSY 120 (Elementary Psychology)
- (6) NUR 115 (Nursing I Introduction to Nursing)

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##### **Second Semester**

- (3) BIOL 204 (Biology of Man and Laboratory in Human Biology)
- (3) BIOL 220 (Microbiology)
- (3) ENGL 101 (English Composition I)
- (3) PCOL 201 (Pharmacology)
- (6) NUR 116 (Nursing II Medical-Surgical Nursing of Adults and Children)

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#### **SOPHOMORE YEAR**

##### **Third Semester**

- (10) NUR 224 (Nursing III Medical-Surgical Nursing of Adults and Children)
- (3) NUR 280 (Issues in Nursing)
- (3) SOC 100 (Introductory Sociology)

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(16)

##### **Fourth Semester**

- (5) NUR 225 (Maternal Child Health Nursing)
- (5) NUR 240 (Psychiatric Mental Health Nursing)
- (3) F&N 303 (Essentials of Nutrition)
- (3) Elective

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## **SUPERVISION**

This program is designed to meet the needs of the individuals who wish to improve their skills as first-line supervisors as well as their general education base.

Because of the many different types of industries and different supervision needs, each supervision student's program is planned jointly by him/her, a representative of his/her firm, and an academic advisor to meet those individual needs.

The curriculum is college level culminating in the awarding of the Associate in Applied Science degree. Graduates of the program are eligible to continue toward a Bachelor of Science degree in supervision.

### **General Plan of Study**

#### **CORE**

<b>Course Number</b>		<b>Course Title</b>	<b>Credit Hours</b>
SPV	252	(Human Relations)	3
SPV	331	(Safety)	3
IET	104	(Industrial Organization)	3
SPV	374	(Supervision)	3
		<b>Total</b>	<b>12</b>

#### **COMMUNICATIONS AREA**

English composition or speech	3
Any area in communication	3
<b>Total</b>	<b>6</b>

#### **FUNCTIONAL AREA**

Recognizing that supervisors work in various functional areas, each student will be expected to select one or more groups of courses that are designed to increase technical effectiveness on the job. The following are examples of existing functional areas.

- Quality Control
- Methods Improvement
- Materials Handling
- Production Planning
- Personnel Relations
- Labor Relations
- Manufacturing Technology

**Total**

**15 credit hours**

## SUPPORTIVE AREA

Each supervisor should have a balanced educational experience. Therefore, he/she should take certain technical and nontechnical courses. Some of the more typical courses considered applicable are listed below:

### Nontechnical

MGMT	200	(Accounting)
MGMT	201	(Cost Accounting)
SOC	100	(Introductory Sociology)
PSY	120	(Elementary Psychology)
GNT	220	(Technical Report Writing)
ECON	210	(Principles of Economics)
IET	250	(Fundamentals of Production Cost Analysis)

### Requirements

**12-18 credit hours**

### Technical

MA	150	(Algebra and Trigonometry)
CHM	111	(General Chemistry)
and	112	
PHYS	220	(General Physics)
and	221	
MET	160	(Applied Engineering Computations)

Engineering and technology courses to be selected on the basis of the individual's career objectives and qualifications.

### Requirements

**12-18 credit hours**

### Grand Total

**62 credit hours**

## CERTIFICATE PROGRAMS

The certificate programs are designed primarily for the more mature part-time student through consultation with representatives from labor, industry, and the service areas of our society.

These are intensive and practical programs of less than 40 semester hours of credit. Advancement in each of these programs can be varied to suit the needs of the individual student who may take one, two, or three courses each semester. The average part-time student can complete any one of the programs within three years.

Enrollment is on the basis of a program carefully tailored to meet individual student needs and vocational objectives through consultation with an experienced counselor. Changes in the student's program arising out of new work assignments or changes in vocational objective may be worked out with his/her counselor.

## **Professional Foremanship**

The Professional Foremanship Certificate Program is an intensive and practical curriculum equivalent to 36 semester hours. It is intended to provide foremen with the professional education needed to handle the many supervisory and technical problems which they meet daily in technical, communications, and human relations fields.

The program has been set up by representatives of industry, professional foremen organizations, and the University. It is designed to meet the needs of management, which is vitally concerned with training foremen for positions of leadership. Course selection is on the basis of a program worked out with the counselor assigned and is carefully tailored to individual needs.

Admission to the program is granted to those mature adults in management positions who meet the entrance standards and requirements.

Candidates may be admitted as degree or nondegree students. Specific questions concerning the program should be directed to the professional foremanship coordinator at the North Central Campus.

### **REQUIRED COURSES** (9 credit hours)

- (3) IET 104 (Industrial Organization)
- (3) SPV 252 (Human Relations in Supervision)
- (3) COM 114 (Fundamentals of Speech Communication)

### **CORE CURRICULUM** (6 credit hours)

Two of the following three courses are required in the basic core curriculum.

- (3) IET 104 (Industrial Organization)
- (3) SPV 240 (Labor Relations)
- (3) SPV 374 (Supervision)

### **ELECTIVES** (9 credit hours)

Additional courses to make a total of 24 credit hours may be chosen in any approved combination.

### **MANAGEMENT EXPERIENCE** (Equivalent to 12 semester hours)

Before receiving the Professional Foremanship Certificate, the candidate must have had two years of successful experience in the management field. Satisfaction of this requirement is met by a confirming letter from the managerial employer under whom the candidate worked. Formal credit is not established for this work, but is considered equivalent to 12 semester hours of credit in the Professional Foremanship Program.

## **BACHELOR OF SCIENCE DEGREE IN INDUSTRIAL EDUCATION**

The Department of Industrial Education consists of two sections: industrial arts and vocational-technical. Each section is concerned with one or more programs and activities designed to equip men and women for entrance into career fields that require an intellectual base upon which practical applications of the knowledge gained in the humanities, the sciences, and the technologies depend. Thus, the courses provided offer a combination of theoretical and practical education.

Graduate and undergraduate programs which prepare students for entrance into a variety of careers in business, education, government, and industry are available. Students may elect to pursue an option or major which will lead to the degree of Bachelor of Science in Industrial Education with a specialty in one of the following areas:

1. Technology teaching (junior college and technical institute teaching)
2. Industrial arts teaching
3. Vocational-industrial teaching

## **BACHELOR OF SCIENCE DEGREE FOR A.A.S. TECHNICIANS**

Through its School of Technology, the University has recognized the need of the graduate of two-year Associate in Applied Science degree and similar curricula for further and broader education. New third- and fourth-year curricula have been especially developed to lead to the Bachelor of Science degree for such students.

The baccalaureate program provides the general education which permits the graduate to engage in a significantly broader span of activities. It provides a very important background in interdisciplinary studies and creates a greater potential for the graduate. It also enables the graduate to do additional work in his/her area of specialization.

This program was designed by the School of Technology with the active assistance of industry. It is offered to enable the engineering technician and similar students who have completed an associate degree program, to improve their performance and increase significantly their promotability.

## **DEPARTMENT OF SUPERVISION**

Undergraduate programs in the Department of Supervision are designed to prepare students for careers in supervisory management, personnel work, and employee training and development. These careers are found in such organizations as businesses, educational institutions, government agencies, hospitals, and industrial firms. Supervision graduates are employed in these organizations in such positions as supervision, personnel, training and development, customer service, field engineering, plant engineering, production control, production engineering, process engineering, programming, project engineering, purchasing, quality control, sales, and technical writing.

In addition to the regular undergraduate four-year program, a student may choose to gain practical work experience by participating in the Supervision Cooperative Education Program.

## **Cooperative Education Program**

The Supervision Cooperative Education Program is designed to combine University study and work-learning experience. The co-op student's work-learning experience is directly related to the plan of study he/she is following on campus, and it is obtained in an employing organization in either business, industry, or government. A rotational schedule (i.e., alternating semesters between the campus and the employing organization) provides the co-op student with a blend of earning, learning, and practical work experience. This approach makes both the classroom study and the work-learning experience more meaningful.

### **FRESHMAN YEAR**

#### **First Semester**

- (6) Technical Skills electives
- (3) ENGL 101 (English Composition I)
- (1) SPV 100 (Supervision Lectures)
- (5) MA 150 (Mathematics for Technology)
- (2) Elective

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(17)

#### **Second Semester**

- (6) Technical Skills electives
- (3) ENGL 102 (English Composition II)
- (3) SPV 252 (Human Relations)
- (3) SOC 100 (Introductory Sociology)
- (3) COM 114 (Fundamentals of Speech Communication)

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(18)

### **SOPHOMORE YEAR**

#### **Third Semester**

- (3) Technical Skills elective
- (3) ECON 210 (Principles of Economics)
- (3) Communication selective
- (3) SPV 462 (Supervised Work Experience)
- (3) Science elective
- (2) Elective

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(17)

#### **Fourth Semester**

- (3) SPV 374 (Supervision)
- (3) Technical Skills elective
- (3) IET selective
- (3) MGMT 200 (Introductory Accounting)
- (3) Science elective

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(15)

### **JUNIOR YEAR**

#### **Fifth Semester**

- (3) SPV 375 (Basic Methods of Training)
- (3) MGMT 201 (Management Accounting I)
- (3) SPV 331 (Occupational Safety and Health)
- (4) PHYS 218 (General Physics)
- (2) Elective

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(15)

#### **Sixth Semester**

- (3) IET selective
- (3) MGMT 431 (Personnel Relations)
- (3) Introductory CS/CIS course
- (6) Elective

—  
(15)

## SENIOR YEAR

<b>Seventh Semester</b>	<b>Eighth Semester</b>
(3) MGMT 430 (Labor Relations)	(3) SPV 574 (Managerial Training and Development)
(3) IET selective	(3) SOC 416 (Industrial Sociology)
(4) SPV 474 (Conference Leadership)	(9) Elective
(3) GNT 220 (Technical Report Writing)	
(3) SPV 376 (Personnel Problems)	
(16)	(15)

## Graduate Study

Graduate courses are available at the Purdue North Central Campus under the auspices of the Graduate School of Purdue University. All courses offered by the University at any campus are subject to the same standards of quality.

### ADMISSIONS

Students may be admitted to the Graduate School and undertake work at the North Central Campus in one of two categories: (1) regular graduate students and (2) nondegree students.

Students enrolling in graduate courses who have been admitted to a graduate school should insure that the course in which they desire to enroll will be accepted in their plan of study.

Students who plan to be admitted to a graduate program in the future must understand that graduate courses taken prior to being admitted may or may not be approved by their graduate committee as a part of their degree requirements.

### Regular Graduate Students

Students who have advanced degree objectives will be admitted as regular graduate students if they have the following qualifications:

They will ordinarily be expected to hold a baccalaureate degree from a college or university of recognized standing. Under special circumstances, individuals who do not have a baccalaureate degree will be considered for admission if they have completed studies equivalent to those required for a baccalaureate degree program at Purdue.

All candidates for admission as regular graduate students must show promise, as judged by academic performance and experience, of ability to perform advanced study and research, and must have adequate preparation in their chosen field of study. Applicants must submit complete official transcripts of all previous college and university studies.

## **Nondegree Students**

Such students are not admitted with advanced degree objectives and are not eligible to become candidates for advanced degrees under this classification.

Subclassifications at the North Central Campus are:

1. Temporary graduate students admitted on the basis of the educational services which can be extended to them in meeting their individual needs—other than degrees.
2. Teaching license objectives which are intended for baccalaureate degree holders seeking to work on teacher license programs without degree objective either preceding or following an advanced degree program.
3. Nondegree or temporary students should realize that no more than nine semester hours of credit may be applied to a regular plan of study if they subsequently become regular graduate students.

## **GRADUATE ADVISING**

Graduate programs are intended to be highly individualized, whenever feasible, thus each student is guided by a major professor and an advisory committee. Degree-seeking students should contact the assigned graduate advisor for assistance.

## **GRADUATE RECORD EXAMINATION**

An applicant who falls in one or more of the following four categories is expected to take the Aptitude Test Section of the Graduate Record Examination.

1. If he/she received his/her bachelor's degree from a nonaccredited institution.
2. If he/she expects to major in aeronautics, astronautics, and engineering sciences; chemical engineering; child development and family life; clothing and textiles; economics; equipment and family housing; foods and nutrition; history; home management and family economics; industrial education; industrial relations; institutional management; nuclear engineering; physical education for women; political science, psychology; or sociology. Other departments may be added to this list.
3. If he/she feels that his/her previous academic record does not adequately reflect his/her ability.
4. If he/she is to be considered for certain fellowship programs. He/she will be informed of this requirement when he/she applies for the fellowship.

Information regarding testing dates and locations may be obtained by writing to the Educational Testing Service, Box 955, Princeton, New Jersey 08540.

## **GRADUATE COURSE DESCRIPTION**

Descriptions of specific courses may be found in *The Graduate School* bulletin.

# Description of Courses

Courses numbered 1-499 are primarily for undergraduate students. Courses numbered 500-599 are for undergraduates (usually juniors and seniors) and graduate students. Courses numbered 600 and above are for graduate students.

For each course the first line of the description should be interpreted as follows: first, the official number of the course; second, its special title; and third, the number of class, laboratory, and credit hours.

## School of Agriculture

Dean R. L. Kohls in Charge, West Lafayette  
Dr. C. L. Porter in Charge, Westville

### AGRICULTURE

#### AGR 101. AGRICULTURAL LECTURES.

Class 2, cr. 1.

To acquaint new students in agriculture with the important problems and opportunities in the various fields of agriculture.

### AGRICULTURAL ECONOMICS

#### AGEC 100. INTRODUCTORY AGRICULTURAL BUSINESS AND ECONOMICS.

Class 3, cr. 3.

The role and characteristics of farm and off-farm agricultural business in our economy; introductory economic and business principles involved in successful organization, operation, and management.

#### AGEC 330. MANAGEMENT METHODS FOR AGRICULTURAL BUSINESS.

Class 3, cr. 3.

Management of the nonfarm firm, with emphasis on business selling to farmers and handling their products. Production; merchandising; advertising and sales promotion; financial management; employee relations; general administrative policy formulation and administration.

### AGRONOMY

#### AGRY 105. CROP PRODUCTION.

Class 2, Lab. 2, cr. 3.

Fundamental principles of crop production and distribution. Emphasis is placed on applying technological advances in agronomy to active crop production situations, including basic soils, agricultural meteorology, and crop physiology and breeding.

#### AGRY 255. SOIL SCIENCE.

Class 1, Rec. 1, Lab. 3, cr. 3. Prerequisite: one year college chemistry.

Differences in soils; soils genesis; physical, chemical, and biological properties of soils; relation of soils to problems of land use and pollution; soil management relative to tillage, erosion, drainage, moisture supply, temperature, aeration, fertility and plant nutrition. Introduction to fertilizer chemistry and use.

**AGRY 429L. GENETICS LABORATORY.**

Lab. 2, cr. 1. Prerequisite or corequisite: AGRY 430.

Experiments and demonstrations with higher plants, fruit flies, flour beetles, bacteria, bacterial viruses, and fungi to elucidate the basic principles of genetics:

**AGRY 430. GENETICS.** Class 3, cr. 3.

Prerequisites: BIOL 108 and 109, or equivalent.

The transmission of heritable traits; probability; genotypic-environmental interactions; chromosomal aberrations; polyploidy; gene mutations; genes in populations; the structure and function of nucleic acids; biochemical genetics; molecular genetics; coding.

## ANIMAL SCIENCES

**ANSC 101. ANIMAL AGRICULTURE.**

Class 3, cr. 3.

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet.

**ANSC 221. INTRODUCTION TO ANIMAL NUTRITION.** Class 3, cr. 3. Prerequisite: CHM 111 or 112, or equivalent.

A study of the digestive processes, composition of foodstuffs, nutritional requirements, and formulation of practical rations for farm animals.

## ENTOMOLOGY

**ENTO 100. INTRODUCTORY ENTOMOLOGY.** Class 3, cr. 3.

Structure, biology, and classification of insects and principles of insect control.

## FORESTRY AND CONSERVATION

**FOR 382. NATURAL RESOURCES AND MAN.** Class 3, cr. 3.

A survey of the interrelationships among man, natural resources, and the environment. Course satisfies conservation requirement for teacher certification.

# Community College

Vice Chancellor for Academic Services in Charge, Westville

## BRIDGE PROGRAM

*Professor:* R. F. Schwarz.

**GNC 100. STUDY SKILLS.** Class 3, cr. 3.

Procedures and practices for the development of good study habits. Includes techniques for better listening, note-taking, textbook reading, time-budgeting, and writing themes and reports.

**GNC 101. TESTING, SELF-ANALYSIS, AND COUNSELING.** Class 3, cr. 3.

Students take, score, and analyze results of selected objective tests. Each test is studied to determine its objectives, reliability, and validity. Each student will develop a profile of himself based on what he learns from the tests.

**GNC 102. TECHNICAL PHOTOGRAPHY.** Class 1, Lab. 5, cr. 3.

Basic concepts in and techniques of still photography leading to sophisticated techniques in biophotography and telephotography. Extensive laboratory experience in all phases including applications to medical photography.

**GNC 160. ARITHMETIC AND FUNDAMENTALS OF ALGEBRA.** Class 3, Lab. 2, cr. 3.

Review of arithmetic and introduction

to elements of high school algebra. Extensive use of word problems to teach basic concepts.

**GNC 260. ALGEBRA AND FUNDAMENTALS OF GEOMETRY.** Class 3, Lab. 2, cr. 3. Prerequisite: GNC 160.

Continuation of GNC 160 with emphasis on geometry.

## **GENERAL BUSINESS**

*Associate Professor: J. R. Blackwell.*

*Assistant Professor: L. H. Krause.*

**GNC 126. PERSONAL FINANCE.** Class 3, cr. 3.

Course emphasizes the management of the individual's personal resources. Topics include personal budgeting, use of credit, purchase of major consumer items, consumer legislation, insurance, investments and taxation.

**GNC 127. INTRODUCTION TO BUSINESS.** Class 3, cr. 3.

This is an introductory course which acquaints the student with existing operations and problems of business and industry. The course includes the role of business as well as specific topics pertaining to establishing, operating, and managing a business.

**GNC 128. PRINCIPLES OF TAX PREPARATION.** Class 3, cr. 3.

A basic survey of the principles of tax preparation for the non-accountant. The course will include the basic skills for preparing and maintaining the necessary financial documents required for tax preparation and information required for preparation of individual, proprietorship, partnership and small corporation tax returns and forms.

**GNC 131. WRITTEN COMMUNICATIONS FOR BUSINESS I.** Class 3, cr. 3.

Instruction in basic grammar, punctuation, sentence analysis, dictionary usage, and vocabulary building as applied in business today.

**GNC 224. ADMINISTRATIVE OFFICE PROCEDURES.** Class 3, cr. 3.

A survey of the general operations, work flow, methods, procedures, equipment, and costs of an administrative office of an organization. The course content includes an understanding of the necessary requirements for an efficient operation of both the small administrative office and/or a section of a larger administrative unit.

**GNC 227. PRINCIPLES OF ACCOUNTING I.** Class 3, cr. 3.

Introduction to the basic language, principles, and procedures of accounting. Emphasis is placed on collection of accounting data for purposes of external reporting.

**GNC 228. PRINCIPLES OF ACCOUNTING II.** Class 3, cr. 3. Prerequisite: GNC 227 or equivalent.

Continuation of GNC 227 with emphasis on accounting for the corporate form of business, managerial accounting for decision making, financial statement analysis, and accounting for manufacturing firms.

**GNC 231. WRITTEN COMMUNICATIONS FOR BUSINESS II.** Class 3, cr. 3. Prerequisite: GNC 131.

Continuation of GNC 131. The study and writing of structurally complete business letters for orders, inquiries, goodwill, adjustments, credit, etc.

**GNC 261. BUSINESS MATH II.** Class 3, cr. 3. Prerequisite: MA 110 or equivalent.

Continuation of MA 110. Course emphasizes algebra and statistics with applications to business problems.

**GNC 325. PRINCIPLES OF BUSINESS BUDGETING.** Class 3, cr. 3.

A survey of general budgetary operations in a business organization. The course content includes an understanding of the various types of budgets, capital and operating budgets, expenditures, use of budgets to control operations and relationship of budgets to the accounting function.

**GNC 327. COST ACCOUNTING.** Class 3, cr. 3. Prerequisite: GNC 228 or equivalent.

Uses of accounting data, job order and process cost accounting for planning and control, decision making, and inventory valuation.

**GNC 328. PRINCIPLES OF RETAILING.** Class 3, cr. 3.

Course will cover types of institutions, store location, layout, fixtures and equipment, store organization, and retail sales. Prices, discounts, mark-up, mark-down, and other problems of sales and merchandising are included.

**GNC 329. PRINCIPLES OF MARKETING.** Class 3, cr. 3.

An analysis of marketing principles that covers both the essential functions that must be performed in marketing and the numerous and varied types of organizations performing the role of marketing.

**GNC 420. BUSINESS LAW.** Class 3, cr. 3.

A course designed to give students an understanding of laws covering business transactions. Course will cover uniform commercial code, contracts, negotiable instruments, sales of personal and real property. The laws governing partnerships, corporations, and individual entrepreneur will be studied.

**GNC 421. DATA PROCESSING IN BUSINESS.** Class 3, cr. 3.

An introduction to basic methods, techniques, and systems of electronic data processing; includes writing of simple programs and discussion of the use of computers in business organizations and management.

**GNC 427. INTERMEDIATE ACCOUNTING I.** Class 3, cr. 3. Prerequisite: GNC 228 or equivalent.

Emphasis on accounting theory, developing statements from incomplete records, statement of changes in financial position, financial analysis.

**GNC 428. INTERMEDIATE ACCOUNTING II.** Class 3, cr. 3. Prerequisite: GNC 427 or equivalent.

Continuation of GNC 427.

**GNC 429. MARKETING SEMINAR.** Class 3, cr. 3. Prerequisite: GNC 329.

Case studies of marketing problems, discussion of problems encountered in on-the-job training plus guest lecturers from marketing management.

# **SECRETARIAL ARTS**

*Assistant Professor: M. A. Cook.*

## **GNC 120. SEMINAR ON OFFICE PRACTICE.** Class 2, cr. 2.

An overview of office procedures covering a variety of topics including business organization, job opportunities, and personal and professional requirements of a secretary/clerk-typist.

## **GNC 121. TYPING I:** Basic. Class 1, Lab 4, cr. 3.

Start with learning keyboard and basic principles. Learn basic rules for arrangement of copy on paper and apply skill and understanding to the production of a variety of letters and reports. Open to non-secretarial students on a space-available basis.

## **GNC 122. STENOGRAPHY I:** Basic. Class 2, Lab 3, cr. 3.

The principles of writing shorthand based on phonetics, including reading of shorthand and basic transcription. Open to non-secretarial students on a space-available basis.

## **GNC 123. FILING SYSTEMS.** Class 2, cr. 2.

A study of alphabetic, geographic, and numeric filing systems with applications.

## **GNC 131. WRITTEN COMMUNICATIONS FOR BUSINESS I.** Class 3, cr. 3.

Instruction in basic grammar, punctuation, sentence analysis, dictionary usage, and vocabulary building as applied in business today.

## **GNC 161. MATHEMATICS OF PERSONAL AND BUSINESS FINANCES.** Class 3, cr. 3.

A study of insurance, taxation, banking, credit, interest and applied office problems.

## **GNC 221. TYPING II:** Advanced. Class 1, Lab 4, cr. 3. Prerequisite: GNC 121.

Develop proficiency in typing a variety of letter styles, tables, technical papers and reports, business forms, and statistical reports. Open to non-secretarial students on a space-available basis.

## **GNC 222. STENOGRAPHY II:** Intermediate. Class 2, Lab. 3, cr. 3. Prerequisite: GNC 122.

Review of shorthand theory and brief forms. Take dictation from new material for three minutes. Transcribe simple letters. Open to non-secretarial students on a space-available basis.

## **GNC 223. OFFICE MACHINES, USE OF.** Class 1, Lab. 2, cr. 2. Prerequisite: GNC 121.

To develop competence in the use of various office machines in current use.

## **GNC 227. PRINCIPLES OF ACCOUNTING I.** Class 3, cr. 3.

Introduction to the basic language, principles, and procedures of accounting. Emphasis is placed on collection of accounting data for purposes of external reporting.

## **GNC 231. WRITTEN COMMUNICATIONS FOR BUSINESS II.** Class 3, cr. 3. Prerequisite: GNC 131.

Continuation of GNC 131. The study and writing of structurally complete business letters for orders, inquiries, goodwill, adjustments, credit, etc.

## **GNC 322. STENOGRAPHY III:** Advanced. Class 2, Lab. 3, cr. 3. Prerequisites: GNC 131, 221, and 222.

Transcribe from shorthand notes into typewritten, mailable letters (applying grammar, punctuation, capitalization, etc., rules as learned in GNC 131). Continue to work on speed building. Open to non-secretarial students on a space-available basis.

## **GNC 422. SPECIALIZED DICTATION AND TRANSCRIPTION.** Class 2, Lab. 3, cr. 3. Prerequisite: GNC 322.

Sharpen stenographic efficiency to a minimum of 100 words per minute for three minutes of sustained dictation. Emphasis is on theory, vocabulary, and typewritten transcription. Open to non-secretarial students on a space-available basis.

# School of Consumer and Family Sciences

(Formerly the School of Home Economics)

Dean N. H. Compton in Charge, West Lafayette

**F&N 303. ESSENTIALS OF NUTRITION.** Class 3, cr. 3. No Prerequisites: Credits not given for both F&N 303 and 315.

Basic nutrition and its application in meeting needs of all ages. Consideration is given to food selection and legislation and community nutrition education programs.

**H 585. FAMILY AND CONSUMER LAW.** Class 3, cr. 3. Pre-requisite: Must be preceeded by senior standing.

A study of the legal rights, responsibilities, and resources of individuals as they function within the family and society as family members and consumers. Planned especially for professional (non-lawyers) who work with families in the fields of home economics, family life and consumer education, nursing, social welfare, pastoral care, and community development.

# Schools of Engineering

Dean J. C. Hancock in Charge, West Lafayette

Dr. J. C. Hayes in Charge, Westville

## CIVIL ENGINEERING

**EG 110. DRAFTING FUNDAMENTALS.** Class 1, Lab. 6 cr. 3.

A basic course in drawing orthographic projection, pictorial drawing, print reading, and reproduction of drawings. Problems designed to require practical reasoning and develop good techniques.

**EG 116. GRAPHICS I.** Class 1, Lab. 4, cr. 2.

Basic graphical methods-instrument and freehand-useful in engineering layout and design for analysis and communication. Multiview representation with some sketching

and basic dimensioning practices. Auxiliary views with sectioning and some conventional representations. Engineering lectures and counseling for scheduling by Department of Freshman Engineering.

**CE 273. MECHANICS OF MATERIALS.** Class 3, cr. 3.

Analysis of stress and strain; equations of equilibrium and compatibility; stress-strain laws; extension, torsion, and bending of bars; membrane theory of pressure vessels; elastic stability; elected topics.

## **MECHANICAL ENGINEERING**

*Associate Professor: J. C. Hayes.*

### **ME 270. BASIC MECHANICS I. (STATICS)** Class 3, cr. 3.

The course covers the fundamental concepts of mechanics, forces and couples, free body diagrams, equilibrium of a particle and of rigid bodies. Topics in subsequent modules include first moments of areas, lines, volumes and masses, centroids and centers of gravity, distributed forces; work, energy, stability; virtual work; internal forces and couples in structural members; friction; continuum statics; electro- and magneto-statics; applications to structural and machine elements, such as bars, beams, trusses, cables, and friction devices.

### **ME 274. BASIC MECHANICS II. (DYNAMICS)** Class 3, cr. 3.

This course covers rectilinear and curvilinear motion of a particle, kinetics of rigid bodies, moments of inertia, kinetics of a rigid body in plane motion, and energy and momentum methods in dynamics, dynamics of a rigid body in three dimensional motion: kinematics, angular momentum, gyroscopic motion, and other applications.

## **School of Humanities, Social Science, and Education**

*Dean R. L. Ringel in Charge, West Lafayette*

## **COMMUNICATION**

*Associate Professor: E. F. Buck.*

### **COM 114. FUNDAMENTALS OF SPEECH COMMUNICATION.** Class 3, cr. 3.

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through problem identification and solution in discussion, to informative and persuasive speaking in standard speaker-audience situations.

### **COM 240. INTRODUCTION TO ORAL INTERPRETATION.** Class 3, cr. 3. Prerequisite: COM 114.

Effective reading of prose, poetry, and drama after an analysis of the meaning and emotional content in each selection. Theory and practice.

### **COM 252. NEWS REPORTING.** Class 1, Lab 3, cr. 3. Prerequisite: COM 250.

Style, news values, and story construction in newspaper writing. Extensive practice in writing various principal types of news stories for the American press. (Typing ability is highly desirable.)

### **COM 315. SPEECH COMMUNICATION OF TECHNICAL INFORMATION.** Class 3, cr. 3. Prerequisite: COM 114. Open only to students enrolled in the School of Technology.

The organization and presentation of information of a practical technical nature. Emphasis is placed upon the study, preparation, and use of audio-visual materials in such presentations.

**COM 318. PRINCIPLES OF PERSUASION.** Class 3, cr. 3. Prerequisite: COM 114 or consent of instructor.

Persuasion and its effects on behavior with emphasis on evidence and reasoning and on emotional and personal proof; practice in critical reception as well as effective composition of persuasive discourse.

**COM 320. GROUP DISCUSSION AND CONFERENCE LEADERSHIP.** Class 3, cr. 3. Prerequisite: COM 114.

A study of group thinking and problem solving methods; participation in and evaluation of committee and informal discussion groups.

**COM 357. HIGH SCHOOL PUBLICATIONS.** Class 3, cr. 3.

Study of the functions, mechanics, and writing techniques of high school newspapers and yearbooks. A survey of editorial, business, and production aspects of student publications with some news writing assignments. Instruction in teaching high school journalism. Recommended for prospective teachers of English.

**COM 415. DISCUSSION OF TECHNICAL PROBLEMS.** Class 3, cr. 3. Prerequisite: COM 315. Open only to students in the School of Technology.

Principles of speech communication related to interpersonal and group discussions on technical topics and problems; practice in using these models in situations typically encountered by the technologists.

## **CREATIVE ARTS**

### **Art and Design**

**A&D 201. ART FOR ELEMENTARY SCHOOL TEACHERS.** Class 2, Studio 4, cr. 4.

Art theory and experiences and curriculum theory and materials preparatory to instruction of elementary school children.

**A&D 355. ART APPRECIATION.** Class 3, cr. 3. Not open to freshmen.

Understanding and appreciation of the problems overcome by mankind in the origins and growth of art. Satisfies the aesthetics requirement of the School of Humanities, Social Science, and Education.

## **Music**

**MUS 250. MUSIC APPRECIATION.** Class 3, cr. 3.

An introduction to the understanding of music. How to listen to its materials. A study of the media, forms, styles, and composers through recorded, live, and film media. Methods used in the structure of music as well as the aesthetic values present in music are also emphasized. Satisfies the aesthetics requirements of the School of Humanities, Social Science, and Education.

# EDUCATION

Associate Professor: L. R. Blythe.

## UNDERGRADUATE LEVEL

### Lower-Division Courses

- ED 150. PERSONAL GROWTH AND DEVELOPMENT.** Class 3, cr. 3.

A multilevel approach to the promotion of personal growth and development through a modified human relations laboratory experience. Designed also to increase learning efficiency and skills through application of basic psychology principles. Two types of activities will be employed: (1) skilled training activities and exercises, and (2) small group discussions of feelings, ideas, and relationships common to all participants.

- ED 249. DIRECTED OBSERVATION IN THE ELEMENTARY SCHOOL.** Lab. 3, cr. 1.

Directed observation for one-half day per week in elementary school classrooms. Individual and group conferences and written records are required.

- ED 285. EDUCATIONAL PSYCHOLOGY.** Class 3, cr. 3. Prerequisite: PSY 120.

An introduction to the application of psychological theories, research results, and methods of inquiry to educational problems, with particular emphasis on human development, learning, and measurement.

## UNDERGRADUATE LEVEL

### Upper-Division Courses

- ED 320. TEACHING THE LANGUAGE ARTS IN THE ELEMENTARY SCHOOL.\*** Class 3, cr. 3.

Materials and methods of teaching oral and written language, listening, spelling, and handwriting in the elementary school.

- ED 321. TEACHING ARITHMETIC IN THE ELEMENTARY SCHOOL.\*** Class 3, cr. 3. Prerequisites: MA 130, 131, 132, ED 249, 285.

Materials and methods used in teaching arithmetic at various grade levels in the elementary school.

- ED 324. MUSIC FOR ELEMENTARY SCHOOL TEACHERS.\*** Class 3, cr. 3.

Basic musical experience, including elementary music skills. Principles and procedures of teaching music. Relationship of music to other subject areas. Music materials.

- ED 326. TEACHING READING IN THE ELEMENTARY SCHOOL.\*** Class 3, cr. 3.

Methods and materials for teaching reading in the elementary school.

- ED 327. CORRECTIVE READING FOR THE CLASSROOM TEACHER.\*** Class 2, Lab. 3, cr. 3. Prerequisites: ED 285, 326, 385.

Classroom procedures for the identification of reading difficulties; selection and application of appropriate methods and materials to provide corrective treatment.

- ED 385. CHILD BEHAVIOR IN THE ELEMENTARY SCHOOL.** Class 2, cr. 2. Prerequisite: ED 285 or consent of instructor.

Presents methods of collecting and using information about the behavior and development of children in the elementary school.

## DUAL LEVEL

- ED 500. HISTORY AND PHILOSOPHY OF EDUCATION.** Class 3, cr. 3. Prerequisite: 12 hours in education.

Consideration of the major ideas, trends, and movements in the development of American education.

\*Prerequisite: admission to the elementary education curriculum.

**ED 523. INTRODUCTION TO MEASUREMENT AND EVALUATION.** Class 2, Lab. 2, cr. 3.

An introduction to the basic concepts and principles of measurement and evaluating, including elementary statistics, principles of test construction, survey of standardized tests.

**ED 530. ADVANCED EDUCATIONAL PSYCHOLOGY.** Class 3, cr. 3.  
Prerequisites: PSY 120 and ED 285.

Theories of learning and development, research on instruction and learning, and principles of measurement applied to educational problems.

**ED 570. AUDIO-VISUAL MEDIA.** cr. 3. Prerequisites: 12 hours of education and psychology.

Evaluation, selection, and utilization of audio-visual media and techniques used in the instructional program of the modern school with added emphasis on the design and development of multimedia presentation.

**ED 571. PREPARATION OF INSTRUCTIONAL MATERIALS.** Class 1, Lab. 4, cr. 3.

Design and preparation of a variety of instructional materials for use by instructional materials specialists, teachers, librarians, and A-V coordinators in educational situations. Laboratory practice is provided in production of these materials.

**ED 580. MEDIA FOR CHILDREN.** Class 3, cr. 3. Prerequisite: five hours of education and psychology.

Books, films, filmstrips, records, magazines, and other resources provided in elementary media centers are studied and evaluated to meet the personal and educational needs of pupils in elementary schools. Emphasis is on wide reading of children's books and viewing of many media and their utilization with children.

**ED 581. MEDIA FOR YOUNG ADULTS.** Class 3, cr. 3. Prerequisites: junior standing and three hours of educational psychology.

Evaluation, selection, and use in the broad subject fields of printed, filmed, and recorded materials for young adults, to meet personal and educational needs.

**ED 590. INDIVIDUAL RESEARCH PROBLEMS.** Cr. 1-6. Must be preceded by six hours of psychology and six hours of education or equivalent professional training.

Opportunities for students to study particular problems under the guidance of a member of the staff. This plan may be used in any field of education or vocational education. Does not include thesis work.

**ED 591. EDUCATIONAL PROBLEMS OF TEACHERS.** Cr. 1-4.

Primarily for experienced teachers desiring credit from special workshops or individual study. Topics of individual study will deal with problems which arise from the professional work of classroom teachers.

## GRADUATE LEVEL

**ED 627. SECONDARY SCHOOL CURRICULUM.** Cr. 2 or 3.

Objectives, organization, and administration of the secondary school curriculum.

**ED 675. LANGUAGE ARTS IN THE ELEMENTARY SCHOOL.** Class 3, cr. 3. Prerequisite: ED 320, its equivalent, or admission by consent of the instructor.

Research, recent trends, and current developments in the field of language arts and implications for classroom practice in the elementary school.

**ED 676. READING IN THE ELEMENTARY SCHOOL.** Class 3, cr. 3. Prerequisite: ED 376, its equivalent, or consent of instructor.

Research, recent trends, and current developments in the field of reading instruction. Emphasis will be on improving developmental reading in the elementary school programs rather than on surveying remedial programs.

<b>ED 677.</b>	<b>SOCIAL STUDIES IN THE ELEMENTARY SCHOOL.</b> Class 3, cr. 3. Prerequisite: ED 322, its equivalent, or admission by consent of instructor.  Social studies-content and place in the modern elementary education curriculum. Materials, instruction techniques, evaluation procedures, and understanding the syntax of the structure of social studies.	<b>ED 679.</b>	<b>ELEMENTARY SCHOOL CURRICULUM.</b> Class 3, cr. 3. Prerequisite: 12 hours in education and psychology.  Needs of children and society; modern programs; procedures for developing a curriculum, including ways to improve the present offerings of a school.
<b>ED 678.</b>	<b>SCIENCE IN THE ELEMENTARY SCHOOL.</b> Prerequisite: ED 323, its equivalent, or admission by consent of instructor.  Analysis of historical developments and present trends in elementary school science education; the designing, implementation, and evaluation of science programs; the role of research in present and future developments.	<b>ED 682.</b>	<b>INDIVIDUALIZING INSTRUCTION IN THE ELEMENTARY AND SECONDARY SCHOOL.</b> Class 3, cr. 3. Must be preceded by completion of a teacher certification program or consent of instructor.  This course explores the foundations underlying individualized instruction, the preparation of individualized instruction materials for the classroom, the role of research in individualized instruction, and the future trends and issues in individualized instruction.

## ENGLISH

*Section Chairman:* J. J. Pappas

*Associate Professors:* J. J. Pappas, R. C. Schlobin, J. J. Stanfield.

*Assistant Professors:* B. J. Lootens, H. W. Phillips.

### UNDERGRADUATE LEVEL Lower-Division Courses

#### ENGL 100. ENGLISH COMPOSITION.

Class 3, Lab 2, cr. 3.

Required of freshmen who need an extensive review of the fundamentals of English grammar, syntax, punctuation, and mechanics, or an introduction to some of the essential principles of composition. After successful completion of ENGL 100 students are assigned to ENGL 101.

#### ENGL 101. ENGLISH COMPOSITION I.

Class 3, cr. 3. Prerequisite for all courses in English except ENGL 100, 185, 285, and any other courses specified by the section in individual cases.

The first half of the basic composition sequence. This course is intended to help students write clear and effective expository prose for their work at the University and beyond. It includes the study of logic, structure, and style, and entails extensive

practice in the writing and rewriting of themes. It also involves the preparation of a lengthy research paper.

#### ENGL 102. ENGLISH COMPOSITION II.

Class 3, cr. 3. Not open to students who have earned a grade of C or higher in ENGL 103 in other divisions of the University.

The second half of the basic composition sequence. This course continues the study and practice of principles of effective written expression. It emphasizes the examination of prose style. Assigned themes will be based largely on the reading of appropriate essays and some literature.

#### ENGL 185. DEVELOPMENTAL READING.

Lab 2, cr. 1

Purpose: to increase reading efficiency by improving comprehension and by developing the motor skills involved in reading speed. Stimulates reading interest through use of films and pacers.

**ENGL 201. THE NATURE OF LITERARY STUDY.** Class 3, cr. 3. Required of English majors.

A study of literary concepts and critical procedures as applied to representative poetry, fiction, and drama, with practice in critical writing.

**ENGL 227. ELEMENTS OF LINGUISTICS.** (AUSL 227.) Class 3, cr. 3.

Lectures and discussions on the main aspects of linguistics. Study of the background of American English sounds and writing systems, grammatical approaches, and social and regional language differences.

**ENGL 230. GREAT NARRATIVE WORKS.** Class 3, cr. 3.

Reading and discussion of great narratives from Homer's *Odyssey* to the twentieth century to develop an understanding of their ideas, structures, and styles. Includes works by such other authors as Jane Austen, Dickens, and Dostoevski.

**ENGL 231. INTRODUCTION TO LITERATURE.** Class 3, cr. 3.

Reading and discussion of great works of various types to develop an understanding of their ideas, structures, and styles. Includes poetry, drama, biography, essay, and prose fiction.

**ENGL 232. THEMATIC STUDIES IN LITERATURE.** Class 3, cr. 3.

(May be repeated for credit.)

Examination of a particular theme, such as the hero, death, or the city, and the techniques by which it is treated in various literary works, usually in more than one genre.

**ENGL 235. INTRODUCTION TO DRAMA.** Class 3, cr. 3.

Reading and discussion of plays of various styles from significant periods of dramatic literature aimed at enhancing the understanding and appreciation of the form and content of all drama.

**ENGL 237. INTRODUCTION TO POETRY.** Class 3, cr. 3.

How to read poetry intelligently; function of diction, metrics, figures of speech, and theme; place of a poem in history, uses of poetry, etc.

**ENGL 238. INTRODUCTION TO FICTION.** Class 3, cr. 3.

Reading and discussion of short stories and seven novels to promote awareness, understanding, and appreciation of the range, values, techniques, and meanings of modern fiction.

**ENGL 239. INTRODUCTION TO BIOGRAPHY.** Class 2, cr. 2.

Biography and autobiography as literary forms. Lives of eminent achievers in the arts and sciences. Reading and discussion to heighten understanding of the range, values, and techniques of reputable biographies and autobiographies, mostly modern. Not open for credit to English majors.

**ENGL 240. SURVEY OF THE LITERATURE OF ENGLAND: FROM THE BEGINNINGS THROUGH THE NEOCLASSICAL PERIOD.** Class 3, cr. 3.

An introduction to English literature from the Anglo-Saxon age through the eighteenth century neoclassical period, with emphasis on such major writers as Chaucer, Spenser, Shakespeare (nondramatic works), Donne, Milton, Dryden, Pope, and Johnson. The course also treats significant minor writers in their relation to literary movements and ideas.

**ENGL 241. SURVEY OF THE LITERATURE OF ENGLAND: FROM THE RISE OF ROMANTICISM TO THE MODERN PERIOD.** Class 3, cr. 3.

A continuation of ENGL 240, this course surveys English literature (excluding the novel) from the late eighteenth century to the twentieth century, with emphasis on such major writers as Blake, Wordsworth, Keats, Tennyson, Arnold, Hardy, Yeats, T.S. Eliot, and Auden. The course also treats significant minor writers in their relation to literary movements and ideas.

**ENGL 250. GREAT AMERICAN BOOKS.** Class 3, cr. 3.

Seven books, such as *The Scarlet Letter*, *Moby-Dick*, and *Walden*, read and discussed as to their literary qualities and their cultural significance.

**ENGL 262. GREEK AND ROMAN CLASSICS IN TRANSLATION.** Class 3, cr. 3.

Study of important works of Greek and Roman literature, their intrinsic literary values, and their influence on later European and American writing and thinking.

**ENGL 264. THE BIBLE AS LITERATURE.** Class 3, cr. 3.

A study of selections from the Old and New Testaments as examples of Hebrew and early Christian literature.

**ENGL 266. WORLD LITERATURE: FROM THE BEGINNINGS TO 1700 A.D.** Class 3, cr. 3.

World literature in translation. Emphasis is on Greek, Hebrew, and early European literatures - the basis of the Western cultural heritage.

**ENGL 267. WORLD LITERATURE: FROM 1700 A.D. TO THE PRESENT.** Class 3, cr. 3.

World literature in translation and in English originals. Focus on the changes and growth in the Western heritage, as reflected primarily in French, English, German, and Russian imaginative writing.

**ENGL 285. READING FOR IMPROVED COMPREHENSION.** Class 2, cr. 2.

Practice in analytic reading of selected current publications, emphasizing techniques for identifying major and minor facts and ideas, real and apparent meanings, rhetorical strategies, and devices of propaganda in various printed media. Emphasizes expository and persuasive prose.

**ENGL 286. VOCABULARY BUILDING.** Class 2, cr. 2.

Development of vocabulary through study of the characteristics of the language, usage, and word formation; exercises and dictionary practice; selected reading.

**UNDERGRADUATE LEVEL**  
**Upper-Division Courses**

(General prerequisite for all English courses numbered from 300-499; fulfillment of the basic composition requirement and three hours of literature or equivalent preparation, or permission of the instructor.)

**ENGL 304. ADVANCED COMPOSITION.**

Class 3, cr. 3.

Designed for students who wish additional training in composition beyond the basic requirements. Extensive practice in the writing of mature expository, critical, and argumentative prose. (The course satisfies the Indiana certification requirement of three hours of advanced composition.)

**ENGL 331. MEDIEVAL ENGLISH LITERATURE.** Class 3, cr. 3.

A survey of Saxon and Medieval English literature (700-1500 A.D.) through intensive reading of Old English heroic, elegiac, and religious poetry and Middle English romance, allegory, lyric, and drama, exclusive of Chaucer.

**ENGL 333. RENAISSANCE ENGLISH LITERATURE.** Class 3, cr. 3.

A survey of Renaissance literature in England through an intensive reading of representative works by such authors as Spenser, Jonson, and Donne (Shakespeare's plays not included.)

**ENGL 335. RESTORATION AND EIGHTEENTH - CENTURY ENGLISH LITERATURE.** Class 3, cr. 3.

A survey of Restoration and Eighteenth-Century literature through an intensive reading of representative works by such authors as Dryden, Pope, Swift, and Johnson (the novel and the drama excluded for the most part.)

**ENGL 337. NINETEENTH - CENTURY ENGLISH LITERATURE.** Class 3, cr. 3.

A survey of Romantic and Victorian literature through an intensive reading of representative works by such authors as Wordsworth, Byron, Keats, Tennyson, Browning, and Arnold (the novel excluded.)

**ENGL 350. SURVEY OF AMERICAN LITERATURE FROM ITS BEGINNINGS TO 1865.** Class 3, cr. 3. Not open to students who have credit for ENGL 250.

An introduction to American literature from the Colonial Period to the Civil War, emphasizing such major literary figures as Edward Taylor, Franklin, Poe, Hawthorne,

Melville, Emerson, Thoreau, and Whitman. The course also treats significant minor writers in their relation to literary movements and ideas and includes the works of minority writers.

**ENGL 351. SURVEY OF AMERICAN LITERATURE FROM 1865 TO THE POST-WORLD WAR II PERIOD.** Class 3, cr. 3. Not open to students who have credit for ENGL 250.

A continuation of ENGL 350, this course surveys American literature from the Civil War to recent times, emphasizing such major literary figures as Dickinson, Twain, James, Crane, Frost, T.S. Eliot, Fitzgerald, Hemingway, and Faulkner. The course also treats significant minor writers in their relation to literary movements and ideas and includes the works of minority writers.

**ENGL 357. LITERATURE OF BLACK AMERICA.** Class 3, cr. 3.

A survey of literature written by black American authors. Close attention paid to the history of black literature and to the historical context in which it was written, as well as to the texts of major works by black writers.

**ENGL 372. INTRODUCTION TO AMERICAN FOLKLORE.** Class 3, cr. 3.

Introduction to the study of Anglo-American traditions: folk tale, song, dance, humor, superstition, games, beliefs, etc., with emphasis on informal discussion of readings, recordings, movies, and lectures.

**ENGL 373. SCIENCE FICTION AND FANTASY.** Class 3, cr. 3.

Representative works of science fiction and fantasy examined in relation to both mainstream and popular literature. Emphasis is on technique, theme, and form.

**ENGL 375. BRITISH DRAMA TO 1800, EXCLUSIVE OF SHAKESPEARE.** Class 3, cr. 3.

A survey of major works of British drama from its medieval beginnings to 1800, including works by such authors as Marlowe, Jonson, Webster, Dryden, Congreve, and Sheridan.

**ENGL 376. THE MOVIES.** Class 2, Lab 3, cr. 3.

The history and aesthetics of the movies from *The Great Train Robbery* and *The Birth of a Nation* or *Intolerance* to contemporary films. Comparison of the cinematic method with the methods of the drama and the novel. One afternoon or evening a week for the screening of films; two periods a week for discussion.

**ENGL 377. MAJOR MODERN POETRY.** Class 3, cr. 3.

The development of new trends in and the interrelationships among the poetry of Ireland, Britain, and the United States. Poets central to modernism, such as Yeats, Pound, Eliot, Williams, and Stevens will be emphasized, and students will also read more recent poets.

**ENGL 381. THE BRITISH NOVEL.** Class 3, cr. 3.

A survey of representative British novels of the eighteenth and nineteenth centuries by such authors as DeFoe, Fielding, Austen, Dickens, Eliot, and Hardy.

**ENGL 382. THE AMERICAN NOVEL.** Class 3, cr. 3.

A survey of representative American novels of the nineteenth and twentieth centuries by such authors as Cooper, Hawthorne, Melville, Twain, James, and Faulkner.

**ENGL 383. MODERN DRAMA: IBSEN TO THE ABSURDISTs.** Class 3, cr. 3.

A survey of major works of Continental, English, and American drama, including such authors as Ibsen, Chekhov, Shaw, O'Neill, and Beckett.

**ENGL 386. HISTORY OF THE FILM TO 1938.** Class 3, Lab 2, cr. 3.

Prerequisite: consent of instructor.

A survey of the American and European cinema from its origins in technology and realism to the aesthetic implications presented by the coming of sound. Emphasis on the feature film and on the prevalent aesthetic attitudes in the first decades of the motion picture.

**ENGL 387. HISTORY OF THE FILM FROM 1938 TO THE PRESENT.** Class 3, Lab 2, cr. 3.

A survey of international cinema for the period indicated. Emphasis on the feature film and its development as a communication tool, popular art form, medium of personal expression, and self-empowering linguistic system.

**ENGL 396. STUDIES IN LITERATURE AND LANGUAGE.** Class 3, cr. 3. (May be repeated for credit)

A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls.

**ENGL 405. CREATIVE WRITING.** Class 3, cr. 3. (May be repeated once for credit, except by Creative Writing Majors.)

Practice in writing short prose narratives and poetry, for students who have finished freshman composition and wish to develop their skills further. Workshop criticism.

**ENGL 420. BUSINESS WRITING: GENERAL APPLICATIONS.** Class 3, cr. 3.

Application of business writing principles to the preparation of common letter types, reports, and advertising copy. Sales, adjustment, collection, and employment letters are stressed.

**ENGL 441. CHAUCER'S CANTERBURY TALES.** Class 3, cr. 3.

Critical reading of *The Canterbury Tales* in Middle English with attention to the literary and cultural background.

**ENGL 442. SHAKESPEARE.** Class 3, cr. 3.

Shakespeare's dramatic craftsmanship, poetry, humor, characterization, psychology, and modern pertinence illustrated in representative tragedies, comedies, and history plays.

**ENGL 444. MILTON'S MAJOR POETRY.** Class 3, cr. 3.

A study of Milton's major poetry, with particular emphasis upon *Paradise Lost* and *Samson Agonistes*.

**ENGL 455. MAIN CURRENTS OF AMERICAN THOUGHT.** Class 3, cr. 3.

A survey of dominant ideas and intellectual trends in America from 1607 to the present as revealed through American literature and as related to American life and culture.

**ENGL 456. AMERICAN HUMOR.** Class 3, cr. 3.

Humorous writings of the nineteenth and twentieth century are studied as to form and technique and also as a reflection of American life. Special emphasis on Mark Twain.

**ENGL 479. THE SHORT STORY.** Class 3, cr. 3.

A historical and critical study of nineteenth and twentieth century short stories – Irish, British, American, and Continental.

**DUAL LEVEL**  
**Undergraduate-Graduate**

(General prerequisite for all English literature courses numbered above 500: fulfillment of the basic composition requirement and six hours of literature, or permission of the instructor.)

**ENGL 535. RESTORATION AND EARLY EIGHTEENTH - CENTURY LITERATURE.** Class 3, cr. 3.

A survey of the nondramatic literature from 1660 to 1744, from Clarendon through Thomson. Emphasizes Bunyan, Dryden, Pope, Swift.

**ENGL 541. CHAUCER.** Class 3, cr. 3.

Intensive study of the development of Chaucer's literary work with consideration of his language, his sources, and various critical approaches to his poetry.

**ENGL 547. THE ROMANTIC MOVEMENT IN ENGLISH LITERATURE.** Class 3, cr. 3.

Surveys the principal writers of the Romantic Movement (Burns to Keats), emphasizing Wordsworth; relates the historical background to the thought and feeling of the writers concerned.

**ENGL 548. VICTORIAN LITERATURE.**

Class 3, cr. 3.

A survey of English poetry and prose from about 1832 to about 1880.

**ENGL 558. THE RISE OF REALISM IN AMERICAN LITERATURE.**

Class 3, cr. 3.

A survey of American literature from about 1855 to 1900, beginning with Whitman and ending with James and the early naturalists.

**ENGL 575. MODERN AMERICAN DRAMA.** Class 3, cr. 3.

Representative plays by major American playwrights from 1920 to the present.

**ENGL 580. LITERATURE AND MODERN THOUGHT.** Class 3, cr. 3.

Reading in literature, philosophy, and social criticism, concentrated on the political, industrial, and scientific revolutions that have molded modern life and thought.

**ENGL 589. DIRECTED WRITING.** Cr.

1-3. Prerequisite: consent of the instructor. (May be repeated for credit)

Writing - creative, popularly technical, biographical, historical, philosophical - on

subjects of the student's choice. Individual conferences only. No class meetings.

**ENGL 590. DIRECTED READING.** Cr.

1-3. Prerequisite: consent of the instructor. (May be repeated for credit)

Directs the reading of students with special interests. Guides students in profitable reading in subjects of their own choice. Individual conferences; no class meetings.

**ENGL 595. CONTEMPORARY AMERICAN FICTION.** Class 3, cr. 3.

Study of fiction of the past two or three decades as it relates to American literary traditions and thought. Survey of scholarship and criticism. Examinations and critical papers.

**ENGL 596. ADVANCED STUDIES IN LITERATURE AND LANGUAGE.** Class 3, cr. 3. (May be repeated for credit)

A course in the study of a special topic directed by an instructor in whose particular field of specialization the content of the course falls. Emphasis on critical analysis, scholarly techniques, and secondary materials.

## FOREIGN LANGUAGES

*Assistant Professors:* R. M. Danald, H. Sokolowski.

### French

**FR 101. FIRST COURSE IN FRENCH.** Class 3, Lab 1, cr. 3.

Introduction to the structure of the language. A certain amount of basic grammatical rules and idiomatic constructions is covered, with illustrations of their application thru simple, graduated text-book readings. Each lesson concentrates on specific rules and constructions with the objective of understanding through reading. Main objective: supplying the students with tools (grammar, idioms) to enable him/her to handle the language in the future.

**FR 102. SECOND COURSE IN FRENCH.** Class 3, Lab. 1, cr. 3. Prerequisite: FR 101.

Continuation of FR 101. Completion of study of basic grammar, proceeding in the same manner as FR 101. Reading with understanding still the main objective, based on knowledge and recognition of grammar and idiomatic constructions.

**FR 203. THIRD COURSE IN FRENCH.** Class 3, cr. 3. Prerequisite: FR 102.

Application of knowledge of grammar and idiomatic constructions to reading with understanding of simple, graduated texts. Progressive building of vocabulary with concise reviews of grammar when necessary. First attempts at writing and impromptu speaking.

**FR 204. FOURTH COURSE IN FRENCH.** Class 3, cr. 3. Prerequisite: FR 203.

Continuation of graduated readings with the objective of enlarging vocabulary and ability to construct sentences. Occasional grammatical review, when necessary. First attempts at composition and conversation.

Introduction of the idea of "thinking in French".

## German

**GER. 101. FIRST COURSE IN GERMAN.** Class 3, Lab. 1, cr. 3.

Introduction to the structure of the language. A certain amount of basic grammatical rules and idiomatic constructions is covered, with illustrations of their application thru simple, graduated text-book readings. Each lesson concentrates on specific rules and constructions with the objective of understanding through reading. Main objective: supplying the students with tools (grammar, idioms) to enable him/her to handle the language in the future.

**GER. 102. SECOND COURSE IN GERMAN.** Class 3, Lab. 1, cr. 3.

Prerequisite: GER. 101.

Continuation of GER 101. Completion of study of basic grammar, proceeding in the same manner as GER 101. Reading with understanding still the main objective, based on knowledge and recognition of grammar and idiomatic constructions.

**GER. 203. THIRD COURSE IN GERMAN.** Class 3, cr. 3. Prerequisite: GER. 102.

Application of knowledge of grammar and idiomatic constructions to reading with understanding of simple, graduated texts. Progressive building of vocabulary with concise reviews of grammar when necessary. First attempts at writing and impromptu speaking.

**GER. 204. FOURTH COURSE IN GERMAN.** Class 3, cr. 3. Prerequisite: GER. 203.

Continuation of graduated readings with the objective of enlarging vocabulary and ability to construct sentences. Occasional grammatical review, when necessary. First attempts at composition and conversation.

Introduction of the idea of "thinking in German".

## Polish

**PLSH 101. BEGINNING POLISH I.** Class 3, Lab. 1, cr. 3.

An introduction to the sounds, spelling, basic structure and a basic vocabulary in Polish. Speaking stressed most of the four basic skills thru class drills and assignments. A limited amount of grammar introduced in the second half of the semester - this study being spread over 4 semesters to allow more practice at each level.

**PLSH 102. BEGINNING POLISH II.** Class 3, Lab 1, cr. 3.

Continuation of PLSH 101. Gradually more stress applied to spelling and pronunciation as well as to structural study. Continued oral drills combined with enlargement of vocabulary.

## Spanish

### SPAN 101. FIRST COURSE IN SPANISH.

Class 3, Lab. 1, cr. 3.

Introduction to the basic structure and use of Spanish. Stress is laid on cognates, idioms and similarities with English to make the student aware of how meaning is achieved in language and to improve his/her use of his/her own language, recognizing that language is a social convention. Minimum objective is understanding parts of speech and how they function.

### SPAN 102. SECOND COURSE IN SPANISH.

Class 3, Lab. 1, cr.

3. Prerequisite: SPAN 101.

Completes the introduction to the basic grammar of Spanish with increased sophistication of insights into and idiomatic uses of language in general and the importance of precise use of language. Some cultural material is introduced. Emphasis on cognates and Spanish derivatives increase the student's vocabulary in English as well as Spanish. Minimum objectives are general knowledge of basic structure of Spanish and a degree of ease in reading and speaking.

### SPAN 203. THIRD COURSE IN SPANISH.

Class 3, cr. 3. Prerequisite:

SPAN 102.

Emphasizes reading with the objective

of teaching the student to read and understand vs. laboriously translating with the use of a dictionary. Short stories and a novellette or drama comprise the texts which provide strong motivation of interest and enjoyment. The beginnings of literary insights are developed as comprehension skill increases. Works of well known, largely contemporary authors are used. Emphasis on reading for enjoyment and practicality. Minimum objective is ability to read simple Spanish of an adult content.

### SPAN 204. FOURTH COURSE IN SPANISH.

Class 3, cr. 3.

Prerequisite: SPAN 203.

Fulfills last semester of language requirement and prepares for further study of Spanish. Emphasis on Iberian and Hispanic culture: history, art, literature, and music and Spain's outstanding contribution to belles lettres and to history through such figures as Don Quixote, Don Juan and Picasso. Basic objectives are ability to comprehend adult literature and know high points of Spanish cultural history. An excellent general cultural course with a uniformly high level of interesting material. Introduces student to folklore and to a general appreciation of the arts. Text is supplemented with a variety of illustrative material in lectures with examples of art, music and literature.

## HISTORY

*Professor: H. Jablon.*

### HIST 102. INTRODUCTION TO WESTERN CIVILIZATION: THE ANCIENT WORLD.

Class 3, cr. 3.

A survey of the history of the ancient world (ancient Near East, Greece, and Rome) from its origins in the immediate prehistoric period to its dismemberment in the early Christian era. Emphasis is placed upon the cultural contributions of the various peoples whose interaction laid the foundation for modern, western civilization. Designed to meet the needs of the beginning student of European and world history.

### HIST 103. INTRODUCTION TO WESTERN CIVILIZATION: THE MEDIEVAL WORLD.

Class 3, cr. 3.

A survey of European history from the disintegration of the western Roman Empire through the age of expansion and discovery in the sixteenth century. Major emphasis is placed on those institutions and habits of thought peculiar to western Europe, in the medieval era including feudal relations, Benedictine monasticism, the Papacy, the German Empire, and scholastic theology. Relevant contemporary developments in the Byzantine and Islamic worlds, however, are also studied. Designed to meet the needs of the beginning student in European history.

**HIST 104. INTRODUCTION TO WESTERN CIVILIZATION: THE MODERN WORLD.** Class 3, cr. 3.

Traces the expansion of Europe into the Americas, Africa, and Asia. The French Revolution, nationalism, and the development of Western European states from the era of the Reformation to the present are studied.

**HIST 151. AMERICAN HISTORY TO 1877.** Class 3, cr. 3.

A study of the development of American political, economic, and social institutions from the early explorations and colonial settlements through Reconstruction.

**HIST 152. UNITED STATES SINCE 1877.** Class 3, cr. 3.

A study of the growth of the United States from 1877 to the present. The new industrialism, agrarian problems, depression, the New Deal, the two world wars, the cold war, and similar topics are analyzed.

**HIST 333. SCIENCE AND TECHNOLOGY IN WESTERN CIVILIZATION I.** Class 3, cr. 3.

A survey of some of the main features of the historical development of science and technology, primarily in the western world, from the dawn of civilization up to Isaac Newton. Emphasis is placed upon the interaction between science, technology, and the societies which encourage or abridge them.

**HIST 334. SCIENCE AND TECHNOLOGY IN WESTERN CIVILIZATION II.** Class 3, cr. 3.

A survey of some of the main features of the historical development of science and technology in the western world from Newton to the present. Emphasis is placed upon the relation between the achievements of individual investigators and the major aspects of the society and culture in which they lived.

**HIST 367. TWENTIETH - CENTURY AMERICAN HISTORY.** Class 3, cr. 3.

A survey of twentieth-century American history, covering major political and economic developments and related intellectual movements. A parallel consideration of foreign affairs traces the emergence of America as a world power and the effects of her new status on the Western Hemisphere, Europe, and Asia.

**HIST 386. HISTORY OF AMERICAN FOREIGN RELATIONS.** Class 3, cr. 3.

The history of American foreign relations from the late colonial period to the present. The elements of continuity in the concerns and goals of United States policy are traced as background for an examination of the new issues and alternative responses that present themselves after great-power status and obligations develop in the twentieth century.

**HIST 396. THE AFRO-AMERICAN TO 1865.** Class 3, cr. 3.

The history of Afro-Americans in America from their African origins to 1865. Emphasis is focused upon early African society, American slavery, and the development of black institutions and culture in the United States.

**HIST 398. THE AFRO-AMERICAN SINCE 1865.** Class 3, cr. 3.

The history of Afro-Americans from 1865 to the present. Their struggles to overcome social, economic, and political oppression and to win basic civil and human rights while making valuable contributions to American society are emphasized.

**HIST 466. INDUSTRIALISM AND THE PROGRESSIVE ERA, 1877 TO 1914.** Class 3, cr. 3.  
Prerequisite: HIST 152.

A survey of late nineteenth- and early twentieth-century American history covering the industrial and corporate development, the Spanish-American War and the resulting imperialism; and the growth of governmental regulation and control.

**HIST 467. RECENT AMERICAN HISTORY.** Class 3, cr. 3. Prerequisites: HIST 151 and 152.

A study of twentieth-century American history into the depression thirties. Domestic political and social developments will be traced from 1914 to 1939, while diplomatic and military events will be covered from the early twentieth century to 1933. Particular attention will thus be given to the First World War and the Great Depression.

**HIST 493. INTERDISCIPLINARY UNDERGRADUATE SEMINAR.** Class 1-3, cr. 1-3. (Same as PHIL 493, POL 493, PSY 493, SOC 493, and THTR 493). (May be repeated for credit.)

An undergraduate seminar devoted to an interdisciplinary examination of social, economic, political, and intellectual movements, using the faculty resources of the participating departments. Subject matter will vary. Each offering of the seminar will be approved by a committee of department heads from the sponsoring departments.

## PHILOSOPHY

**PHIL 110. INTRODUCTION TO PHILOSOPHY.** Class 3, cr. 3.

The basic problems and types of philosophy with special emphasis upon the problems of knowledge and nature of reality.

**PHIL 111. ETHICS.** Class 3, cr. 3.

A study of the nature of moral value and obligation. Topics such as the following will be considered: different conceptions of the good life and standards of right conduct; the regulation of non-moral and moral goodness; determinism, free will, and the problem of moral responsibility; the political and social dimensions of ethics; the principles and methods of moral judgment. Readings will be drawn both from contemporary sources and from the works of such philosophers as Plato, Aristotle, Aquinas, Butler, Hume, Kant, and J. S. Mill.

**PHIL 206. PHILOSOPHY OF RELIGION.** Class 3, cr. 3.

The nature and origin of religion. A critical examination of the idea of God, the nature of evil, immorality, and worship.

**PHIL 250. INDUCTIVE LOGIC.** Class 3, cr. 3. Prerequisite: PHIL 150 or consent of the instructor.

A presentation and analysis of various types of nondeductive logical inference, those used in the physical and social sciences, and in everyday problem solving situations. Some basic work may be done in statistics and the probability calculus. Familiarity with deductive logic is required.

**PHIL 331. RELIGIONS OF THE WEST.** Class 3, cr. 3.

A study of the origins and present institutions of Judaism, Christianity, and Islam. This will include a brief study of the influences upon western religion of ancient Egypt, Mesopotamia, Greece, Rome, and Persia.

## POLITICAL SCIENCE

*Associate Professor: A. O. Bowser.*

**POL 101. AMERICAN GOVERNMENT AND POLITICS.** Class 3, cr. 3.

A study of the nature of democratic government, the U.S. Constitution, federalism, civil rights, political dynamics, the presidency, Congress, and the judiciary.

**POL 141. INTRODUCTION TO COMPARATIVE POLITICS.** Class 3, cr. 3.

Introductory survey of major European governments, including mainly Great Britain, France, Germany, and the Soviet Union, with special attention to historical, cultural, and constitutional developments, the organization and ideologies of political parties, and current political problems.

**POL 230. INTRODUCTION TO INTERNATIONAL RELATIONS.**

Class 3, cr. 3.

Introductory survey of the underlying forces in international relations, the foreign policies of the great powers, and agencies of control and cooperation.

**POL 350. INTRODUCTION TO POLITICAL THEORY: THEORY AND CONCEPTS.** Class 3, cr. 3.

An analysis of the most important concepts found in the writings of outstanding political theorists from the time of the Greeks through the end of the Middle Ages with attention paid to writings of the Reformation period. An examination of two systems of political thought in the western political tradition: the Classical and the Christian. The ideas of the theorists are studied in the light of the society and institutions of their time.

**POL 370. INTRODUCTION TO COMPARATIVE STATE POLITICS.** Class 3, cr. 3.

An introduction to the structure and

process of state government, including the legal and political relationships between the state and local units of government.

**POL 429. CONTEMPORARY POLITICAL PROBLEMS** Class 3, cr. 3. Prerequisite: POL 101 or 301. (Formerly POL 529.)

Contemporary political problems in the United States affecting the interpretation of democracy, human rights and welfare, social pressures, and intergovernmental relations.

**POL 510. POLITICAL PARTIES AND POLITICS.** Class 3, cr. 3.

A study of political leadership, pressure groups, political parties, nominating processes, campaign strategies, voting behavior, and money in elections.

**POL 560. CONSTITUTIONAL LAW.**

Class 3, cr. 3. Prerequisite: POL 101.

A survey of selected areas of constitutional law, considering the political and social influences as well as the doctrinal forces which have produced these policies.

## **PSYCHOLOGICAL SCIENCES**

*Associate Professor: J. W. Gaines.*

**PSY 120. ELEMENTARY PSYCHOLOGY.** Class 3, cr. 3.

Introduction to the fundamental principles of psychology, covering particularly the topics of personality, intelligence, emotion, attention, perception, learning, memory, and thinking.

**PSY 235. CHILD PSYCHOLOGY.** Class 3, cr. 3. Prerequisite: PSY 120 or equivalent.

General principles of children's behavior and development, from conception to adolescence, including sensory and motor development, and basic psychological processes such as learning, motivation, and socialization.

**PSY 303. EXPERIMENTAL PSYCHOLOGY.** Class 2, Lab. 2, cr. 3. Prerequisite: PSY 301 or equivalent.

The lecture portion of this course covers

methodology and the philosophy of science, while the laboratory experience covers different techniques in several areas of experimental psychology.

**PSY 310. SENSORY AND PERCEPTUAL PROCESSES.** Class 3, cr. 3. Prerequisite: six hours of psychology.

Theory, problems, and research in sensation and perception, including physiological bases and measurement techniques.

**PSY 311. HUMAN LEARNING AND MEMORY.** Sem. 1 and 2. Class 3, cr. 3. Prerequisite: PSY 301 or consent of instructor.

Theory and research in verbal learning, attention, discrimination learning, thinking, conceptual and organization processes, memory and languages.

**PSY 340. GENERAL SOCIAL PSYCHOLOGY.** Class 3, cr. 3. (Not open to students with credit for SOC 340.) Prerequisite: three hours of psychology or of sociology.

Conditions and consequences of human behavior in social situations, with emphasis upon the mechanism and the processes on the basis of which socialization takes place.

**PSY 350. ABNORMAL PSYCHOLOGY.** Class 3, cr. 3. Prerequisite: three hours of psychology.

Various forms of mental disorder from the standpoint of their origin, treatment, prevention, social significance, and relation to problems of normal human adjustment.

**PSY 423. PSYCHOLOGY OF PERSONALITY.** Class 3, cr. 3. Prerequisite: three hours of psychology.

The development, structure, and functioning of the normal personality.

**PSY 500. STATISTICAL METHODS APPLIED TO PSYCHOLOGY, EDUCATION, AND SOCIOLOGY.** Class 3, cr. 3.

Descriptive statistics and an introduction to sampling statistics. Application to psychological, sociological, and educational data.

**PSY 548. GROUP HUMAN RELATIONS.** Class 3, cr. 3. Prerequisite: six hours of psychology.

A concrete introduction to the psychology of personality, the structure and dynamics of small groups, and the formation of development of group cultures. Members constitute themselves into a self-analytic group which analyzes its own processes in relation to the personalities and roles of its members.

## SOCIOLOGY AND ANTHROPOLOGY

**ANTH 105. AN INTRODUCTION TO CULTURAL ANTHROPOLOGY.** Class 3, cr. 3.

An introduction to the science of man and his works. Emphasis on the nature of culture and culture change; relationship of culture and personality. Attention given to the variations with the "universal" institutions of man: language, technology, the family, systems of social control, economics, warfare, religion, art, and values. Processes of invention, diffusion and acculturation; theoretical interpretations of the direction and process of cultural development.

**SOC 100. INTRODUCTORY SOCIOLOGY.** Class 3, cr. 3. May not be taken for credit by students of junior or senior standing.

A survey course designed to introduce the student to the science of human society. Fundamental concepts, description and analysis of society, culture, the socialization process, social institutions, and social change.

**SOC 220. SOCIAL PROBLEMS.** Class 3, cr. 3. Prerequisite: SOC 100 or 312, or equivalent.

Analysis of problem conditions in modern society-family disorganization, racial conflicts, class struggle, mental illness, narcotic addiction, gambling, alcoholism, and others. Social factors involved in the development, continued existence, and amelioration of these conditions.

**SOC 350. SOCIAL PSYCHOLOGY OF MARRIAGE.** Class 3, cr. 3. (Not open to students who have had CDFL 350.)

Designed to provide an understanding of contemporary courtship, marriage, and family interaction as cultural, social and social-psychological phenomena. Consideration of the major sources of marital strain and conflict within a heterogeneous, rapidly changing society.

**SOC 422. CRIMINOLOGY.** Class 3, cr. 3. Prerequisite: SOC 100, 312, or equivalent.

Nature and cause of crime; methods of dealing with adult and juvenile offenders; consideration of present programs for the social treatment of crime in the light of needed changes.

# School of Management

Dean J. S. Day in Charge, West Lafayette

## ECONOMICS

*Assistant Professor:* R. A. Martin

**ECON 210. PRINCIPLES OF ECONOMICS.** Class 3, cr. 3.

Study of the basic economic institutions and the role they play in defining and achieving the nation's economic goals. Emphasis will be placed on the interdependent nature of the economy and the effects of economic decisions on the individual and society.

**ECON 211. CONTEMPORARY ECONOMIC PROBLEMS.** Class 3, cr. 3. Prerequisite: ECON 210.

The course assists students in analyzing current economic issues such as inflation and unemployment, the energy crisis, environmental protection, poverty and income distribution, urban blight, health care, and education.

**ECON 251. MICROECONOMICS.** Class 3, cr. 3.

Price theory and resource allocation. Emphasis is on developing a detailed understanding of the principles of microeconomic analysis and their application to understanding price and market behavior.

**ECON 252. MACROECONOMICS.** Class 3, cr. 3. Prerequisite: ECON 210 or 251.

Determination of macroeconomic variables. National income and employment. Money and banking. Interest rates and financial markets. Inflation and balance-of-payments problems. The role of monetary and fiscal policy in achieving macroeconomic goals.

**ECON 352. INTERMEDIATE MACROECONOMICS.** Class 3, cr. 3. Prerequisites: ECON 210 and 251.

Macroeconomic behavior. The determinates of consumption, investment, and the aggregate demand for assets. The joint determination of income, the price level, and the rate of interest. The role of government. Elements of economic growth.

**ECON 490. PROBLEMS IN ECONOMICS.** Cr. 1-4.

Arrange with instructor before enrolling. Supervised reading and reports in various subjects. Open only to a limited number of seniors with superior records in previous courses.

## MANAGEMENT

**MGMT 100. MANAGEMENT LECTURES.** Class 1, cr. 1.

An introduction and survey of the field of management. Exposure to the different functional areas of management will be stressed. Focus will be on the individual development of the student in regards not only to future professional employment but also to his or her educational planning.

**MGMT 200. INTRODUCTORY ACCOUNTING.** Class 3, cr. 3.

An examination of the basic concepts and conventions which underlie financial reporting. Construction and uses of financial statements.

**MGMT 201. MANAGEMENT ACCOUNTING I.** Class 3, cr. 3. Prerequisite: MGMT 200 or equivalent.

An introduction to internal uses of accounting information. Consideration of job order, process, and standard cost accounting systems, as well as other managerial accounting topics.

**MGMT 300. FINANCIAL ACCOUNTING I.** Class 3, cr. 3. Prerequisite: MGMT 201 or equivalent.

Intermediate accounting. Financial reporting to management, investors, and interested external parties. Emphasis on asset, liability and income measurement, and rule formulation in contemporary problem areas.

**MGMT 302. BUSINESS STATISTICS.**

Class 3, cr. 3. Prerequisite: MA 220; prerequisite or corequisite: CS 210.

Introduction to probability models and statistical procedures with emphasis on the applications to management decision problems. Topics include managerial applications, descriptive statistics, elementary probability models sampling distributions, testing of hypothesis, and regression analysis.

**MGMT 310. FINANCIAL MANAGEMENT.**

Class 3, cr. 3. Prerequisite: MGMT 201.

Management of the financial affairs of the industrial enterprise. Working capital management, asset management, capital budgeting, capital structure decisions, and dividend policy.

**MGMT 323. INTRODUCTION TO MARKETING ANALYSIS.** Class 3, cr. 3. Prerequisite: MGMT 200. Not open to student with credit in MGMT 320 or 324.

An introductory course in marketing which is focused on the role of marketing

in the changing business environment. The objective of the course is to provide a systematic understanding of the scope and complexities of issues related to marketing management.

**MGMT 402. TAX ACCOUNTING.** Class 3, cr. 3. Prerequisite: MGMT 300.

The major income tax issues involved in the tax computations and decisions of individuals, partnerships and corporations.

**MGMT 445. INVESTMENT MANAGEMENT.** Class 3, cr. 3. Prerequisite: ECON 210, 217, or 219.

Examination of investment alternatives relevant to the individual investor. Operations of the markets in which securities are traded. Theory and application of security valuation and portfolio selection techniques. Evaluation of investment performances.

**MGMT 490. PROBLEMS IN MANAGEMENT.** Cr. 1-4. Arrange with instructor before enrolling.

Investigation in a specific management field.

# School of Pharmacy and Pharmacal Sciences

Dean V. E. Tyler in Charge, West Lafayette

**PCOL 201. INTRODUCTORY PHARMACOLOGY.** Class 3, cr. 3.

An introduction to the pharmacological basis of therapeutics.

# School of Science

Dean A. Clark in Charge, West Lafayette

## BIOLOGICAL SCIENCES

*Professor:* C. L. Porter.

*Associate Professor:* G. T. Asteriadis.

*Assistant Professor:* T. C. Matthews

**BIOL 108. BIOLOGY OF PLANTS.** Cr. 1-4.

Introduction to the growth, functioning, structures, heredity, diversity of plants, and their interactions with the environment.

**BIOL 109. BIOLOGY OF ANIMALS.** Cr. 1-4.

Introduction to the structure, functioning, heredity, development, classification, and evolution of animals, and their interactions with the environment.

**BIOL 121. BIOLOGY I: DIVERSITY, ECOLOGY, AND BEHAVIOR.** Sem. 1, Class 2, cr. 2. Corequisite: BIOL 122.

The first principles of organismic and evolutionary biology; a phylogenetic synopsis of the major groups of organisms from viruses to primates; an introduction to physiological ecology, population biology, biogeography, community ecology, and behavior.

**BIOL 122. LABORATORY IN BIOLOGY I: DIVERSITY, ECOLOGY, AND BEHAVIOR.** Sem. 1, Lab 4, cr. 2. Corequisite: BIOL 121.

Laboratory, field and computational exercises introducing the fields of taxonomy, physiological ecology, population ecology, community ecology and applied ecology.

**BIOL 131. BIOLOGY II: DEVELOPMENT, STRUCTURE, AND FUNCTION OF ORGANISMS.** Sem. 2, Class 2, cr. 2. Prerequisite: BIOL 121, 122; Corequisite: BIOL 132.

Principles of development of plants and animals, and the relationship between the structure and function of selected systems of these organisms.

**BIOL 132. LABORATORY IN BIOLOGY II: DEVELOPMENT, STRUCTURE, AND FUNCTION OF ORGANISMS.** Sem. 2, Lab 4, cr. 2. Prerequisite: BIOL 121, 122; Corequisite: BIOL 131.

Descriptive aspects of early plant and animal development; gross anatomy, histology and physiology of selected plant and animal systems.

**BIOL 203. BIOLOGY OF MAN.** Sem. 1, Class 2, Lab. 2, cr. 3.

Introduction to human biology with emphasis on anatomy and physiology.

**BIOL 204. BIOLOGY OF MAN.** Sem. 2, Class 2, Lab. 2, cr. 3.

Continuation of BIOL 203.

**BIOL 205. BIOLOGY FOR ELEMENTARY SCHOOL TEACHERS.** Sem. 1, Class 2, Lab. 2, cr. 3.

Unifying concepts of biology taught with materials appropriate for future elementary school teachers.

**BIOL 206. BIOLOGY FOR ELEMENTARY SCHOOL TEACHERS.** Sem. 2, Class 2, Lab. 2, cr. 3.

Continuation of BIOL 205.

**BIOL 211. THE SOCIAL IMPACT OF THE BIOLOGICAL SCIENCES.** Sem. 1, Class 2, Lab. 2, cr. 3

An introduction to basic concepts, experimentation, and information found within the biological sciences. Emphasis is placed upon the role of biology within the social framework. Relationships between this discipline and common social problems are explored.

**BIOL 212. THE SOCIAL IMPACT OF THE BIOLOGICAL SCIENCES.** Sem. 2, Class 2, Lab. 2, cr. 3.

A continuation of BIOL 211.

**BIOL 220. INTRODUCTION TO MICROBIOLOGY.** Sem. 2, Class 2, Lab. 2, Rec. 1, cr. 3. Prerequisites: one year of general chemistry and one semester of a life science.

The isolation, growth, structure, functioning, heredity, identification, classification, and ecology of microorganisms, their role in nature and significance to man.

**BIOL 221. INTRODUCTION TO MICROBIOLOGY.** Sem. 2, Class 2, Lab. 2, Rec. 1, cr. 4. Prerequisites: one year of general chemistry and one semester of a life science.

The isolation, growth, structure, functioning, heredity, identification, classification, and ecology of microorganisms, their role in nature and significance to man.

**BIOL 260. STRUCTURAL BIOLOGY.** Sem. 2, Class 2, cr. 2. Prerequisites: BIOL 103 and 104 or 108 and 109 or equivalent; prerequisite or corequisite: BIOL 261.

A description of biological structure at diverse levels of organization from molecules to multi-cellular organisms with emphasis on the relationship of structure and function.

**BIOL 261. LABORATORY IN STRUCTURAL BIOLOGY.** Sem. 2, Lab. 4, cr. 2. Prerequisites: BIOL 103 and 104 or 108 and 109 or equivalent.

Structure of plants and animals with emphasis on comparative, phylogenetic, and functional relationships.

## CHEMISTRY

*Associate Professor:* R. M. Hawthorne.  
*Assistant Professor:* H. A. Szymanski.

**CHM 111. GENERAL CHEMISTRY.**

Class 2, Lab. 3, cr. 3.

Required for all freshmen registered

**BIOL 285. ENVIRONMENTAL BIOLOGY.** Sem. 1, Lect. 2, Lab. 3, cr. 3. Prerequisites: a year of life science and a year of general chemistry.

Interactions of the biotic and abiotic components of natural environments. Ecological principles and phenomena associated with populations, communities, and ecosystems. Natural selection and other aspects of evolution. Principles of conservation.

**BIOL 295. SPECIAL ASSIGNMENTS.**

Sem. 1 and 2, cr. variable.

Reading, discussions, written reports or laboratory work selected for enrichment in special areas of the biological sciences. Consent of instructor required. May be repeated for credit.

**BIOL 301. HUMAN DESIGN: ANATOMY AND PHYSIOLOGY.** Sem. 1, Class 2, cr. 3. Prerequisites: one year of life science and one year of general chemistry.

An analysis of the anatomy and physiology of the human organism at the molecular, cellular, and organ system levels. The fluids and gases which comprise the internal environment of the human organism will be examined to demonstrate basic homeostatic mechanisms. The anatomy of the integumentary, circulatory, urinary, and respiratory systems will be integrated with the study of their physiological functions.

**BIOL 302. HUMAN DESIGN: ANATOMY AND PHYSIOLOGY.** Sem. 2, Class 2, Lab. 2, cr. 3.

A continuation of BIOL 301. The gastrointestinal, nervous, endocrine, reproductive, and musculoskeletal systems will be examined. Regulatory mechanisms will be emphasized.

in the School of Agriculture or in biology options of the School of Science who are not in CHM 115 or 117.

**CHM 112. GENERAL CHEMISTRY.**

Class 2, Lab. 3, cr. 3.

Continuation of CHM 111.

**CHM 115. GENERAL CHEMISTRY.**

Class 3, Lab. 3, cr. 4.

Required of students majoring in chemistry, physics, and engineering who do not take CHM 117-126.

Laws and principles of chemistry, with special emphasis on topics of importance in engineering. Numerical problems and relationships are introduced whenever quantitative treatment is possible.

**CHM 116. GENERAL CHEMISTRY.**

Class 3, Lab. 3, cr. 4.

A continuation of CHM 115.

**CHM 119. GENERAL CHEMISTRY.**

Class 2, Lab. 3, cr. 3.

A survey of general chemistry with emphasis on topics of importance to biology. Offered only for students in the technology programs.

**CHM 224. INTRODUCTORY QUANTITATIVE ANALYSIS.** Class 2, Lab. 6, cr. 4. Prerequisite: CHM 112 or 116.

Introduction to titrimetric, gravimetric, and instrumental methods of analysis. Required of students in biology or the pre-professional program who do not take CHM 321. Does not satisfy chemistry major requirements. Offered according to demand.

**CHM 255. ORGANIC CHEMISTRY.**

Class 3, cr. 3. Prerequisite: CHM 108, 110, 112, 116, or 118.

**CHM 255L. ORGANIC CHEMISTRY LABORATORY.** Lab. 3, cr. 1.

Laboratory experiments to accompany CHM 255.

**CHM 256. ORGANIC CHEMISTRY.**

Class 3, cr. 3.

Continuation of CHM 255.

**CHM 256L. ORGANIC CHEMISTRY LABORATORY.** Lab. 3, cr. 1.

Laboratory experiments to accompany CHM 256.

## COMPUTER SCIENCES

**CS 220. PROGRAMMING I.** Class 3, cr. 3. Prerequisite: one semester of mathematics beyond MA 151.

Introduction to the intuitive notion of an algorithm; representation of algorithms in narrative form as flow charts and as computer programs; general structure of computers; computer experience using a procedure-oriented language in programming algorithms such as those used in elementary numerical calculations, sorting, simulation of a random process and symbol manipulation; definition and use of functions, subroutines and iterative procedures; survey of a variety of significant uses of computers.

**CS 380. INTRODUCTION TO DATA MANAGEMENT.** Class 3, cr. 3. Prerequisite: CS 220.

Introduction to basic concepts of file organization and retrieval of data from magnetic tape and disc storage media; internal and external sorting techniques for tape and disc resident data files; introduction to the COBOL programming language; illustrative problems from business data processing.

## GEOSCIENCES

The following courses are administered by the Department of Physics.

**GEOS 261. THE SOLAR SYSTEM.** Class 3, cr. 3.

A descriptive nonmathematical presentation of the results of modern astronomy, together with historical background.

**GEOS 262. STELLAR ASTRONOMY.** Class 3, cr. 3.

A descriptive nonmathematical presentation of the results of modern astronomy, together with historical background.

# DIVISION OF MATHEMATICAL SCIENCES

*Acting Section Chairman:* L. E. Bednar

*Associate Professors:* L. E. Bednar, J. J. Countryman, L. A. Machtinger.

*Assistant Professors:* M. A. Kasper, D. E. Lauer.

**MA 2.** **PLANE GEOMETRY.** Class 5, cr. 0. Credit: one unit for admission.

**MA 110.** **BUSINESS MATHEMATICS.** Class 3, cr. 3.

A survey of topics in business mathematics. Topics include metric system, buying, pricing and selling, payroll, depreciation, business profit, partnerships, corporations, simple and compound interest, and analytical procedures.

**MA 111.** **ALGEBRA.** Class 3, cr. 3. (On West Lafayette Campus, given only for applied technology curricula. Not transferable from regional campuses except in applied technology curricula.)

This course satisfies the one unit of algebra required for admission.

**MA 112.** **TRIGONOMETRY.** Class 3, cr. 3. Not open to students with credit in MA 151 or 153.

For freshmen and others with two units of high school algebra.

**MA 123.** **ELEMENTARY CONCEPTS OF MATHEMATICS I.** Class 3, cr. 3. Not open to students with credit in MA 133.

Numeration systems; natural numbers; mathematical systems; mathematical reasoning; elementary set theory; elementary logic; mathematical proof; the number system of arithmetic; arithmetic algorithms.

**MA 124.** **ELEMENTARY CONCEPTS OF MATHEMATICS II.** Class 3, cr. 3. Prerequisite: MA 123. Not open to students with credit in MA 133.

The system of integers; rational numbers; polynomials; the real and complex number systems; elements of plane geometry; relations, functions, and graphs; elements of analytic geometry.

**MA 130.** **MATHEMATICS FOR ELEMENTARY TEACHERS I.** Class 3, cr. 3. Not open to students with credit in MA 123.

Numeration systems; finite mathematical systems; abstract mathematical systems, groups, fields; natural numbers through rationals, a structural approach, properties, algorithms; mathematical reasoning and proof.

The sequence MA 130-131-132 fulfills the mathematical requirements for elementary education majors. MA 123-124 may be substituted for 130 in meeting this requirement.

**MA 131.** **MATHEMATICS FOR ELEMENTARY TEACHERS II.** Class 3, cr. 3. Prerequisite: MA 130 or 124.

Informal study of metric and non-metric properties of geometric figures (primarily in a plane), measurement; introduction to foundations of Euclidean geometry.

The sequence MA 130-131-132 fulfills the mathematics requirements for elementary education majors. MA 123-124 may be substituted for 130 in meeting this requirement.

**MA 132.** **MATHEMATICS FOR ELEMENTARY TEACHERS III.** Class 3, cr. 3. Prerequisite: MA 130. Open only to students majoring in elementary education.

Integers, rationals, reals, a structural approach with proofs; algorithms, decimal and fractional notation; probability.

**MA 147.** **ALGEBRA AND TRIGONOMETRY FOR TECHNOLOGY I.** Class 3, cr. 3.

College algebra and trigonometry for technology students. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.

**MA 148.** **ALGEBRA AND TRIGONOMETRY FOR TECHNOLOGY II.** Class 3, cr. 3.

Continuation of MA 147. Not open to students with credit in MA 150. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.

- MA 150. MATHEMATICS FOR TECHNOLOGY.** Class 5, cr. 5. Not open to students with credit in MA 147 or 148.  
 College algebra and trigonometry for technology students. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.
- MA 151. ALGEBRA AND TRIGONOMETRY.** Class 5, cr. 5. Not open to students with credit in MA 153 or 154. Prerequisite: Two years of high school algebra or MA 147 and 148.  
 College algebra and trigonometry for students with inadequate preparation for MA 163. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.
- MA 153. ALGEBRA AND TRIGONOMETRY I.** Class 3, cr. 3. Not open to students with credit in MA 151.  
 MA 153-154 is a two-semester version of 151. Does not carry credit toward graduation in the Schools of Engineering or the Division of Mathematical Sciences.
- MA 154. ALGEBRA AND TRIGONOMETRY II.** Class 3, cr. 3. Not open to students with credit in MA 151. Continuation of MA 153.  
 Does not carry credit towards graduation in the Schools of Engineering or the Division of Mathematical Sciences.
- MA 163. INTEGRATED CALCULUS AND ANALYTIC GEOMETRY I.** Class 5, cr. 5. Not open to students with credit in MA 161, 171.  
 Topics from plane analytic geometry. Introduction to differentiation and integration. Application. Designed for students with incomplete background in analytic geometry.
- MA 164. INTEGRATED CALCULUS AND ANALYTIC GEOMETRY II.** Class 5, cr. 5.  
 Continuation of MA 163. Completion of introductory study of topics in plane analytic geometry and the calculus of one variable.
- MA 213. FINITE MATHEMATICS I.** Class 3, cr. 3. Prerequisite: MA 151 or equivalent.  
 Elementary logic, basic set theory, finite mathematical models, elementary probability theory. Applications to problems in the biological and social sciences.
- MA 214. FINITE MATHEMATICS II.** Class 3, cr. 3. Prerequisite: MA 213.  
 Simultaneous linear equations, matrices, and vectors, linear programming, game theory. Applications to problems in the biological and social sciences.
- MA 223. INTRODUCTORY ANALYSIS I.** Class 3, cr. 3. Prerequisite: MA 151 or equivalent. Should be preceded by MA 214. Not open to students with credit in MA 162 or 171.  
 Differential and integral calculus of one variable. Applications to problems in the biological and social sciences.
- MA 224. INTRODUCTORY ANALYSIS II.** Class 3, cr. 3. Prerequisite: MA 221. Not open to students with credit in MA 172 or 261.  
 Partial derivatives; differentials; multiple integrals; introduction to differential equations. Applications to problems in the biological and social sciences.
- MA 261. MULTIVARIATE CALCULUS.** Class 4, cr. 4. Prerequisite: MA 162.  
 Calculus: Indeterminate forms, parametric equations, solid analytic geometry, partial differentiation, multiple integrals infinite series.
- MA 262. LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS.** Class 4, cr. 4. Prerequisite: MA 261.  
 Calculus: Linear algebra, elements of differential equations.
- MA 351. ELEMENTARY LINEAR ALGEBRA.** Class 3, cr. 3. Prerequisite: MA 261.  
 Systems of linear equations, finite dimensional vector spaces, matrices, determinants, applications to analytic geometry.

- MA 361. ADVANCED CALCULUS AND DIFFERENTIAL EQUATIONS.** Class 3, cr. 3. Prerequisite: MA 351.  
 Eigenvalues, partial differentiations, total differential, maxima and minima, line integrals, differential equations.
- MA 453. ALGEBRA I.** Class 3, cr. 3. Prerequisite: MA 351, or consent of instructor. MA 453 and 454 are primarily for mathematics majors.  
 Fundamental properties of integers, polynomials groups, rings, fields.
- MA 547. ANALYSIS FOR TEACHERS.** Class 3, cr. 3. Prerequisite: MA 261.  
 Inequalities, sequences, functions, limits. Application to such basic concepts as length and area and their implications for the teacher of mathematics. The real number system and topology of the real line.
- MA 548. ANALYSIS FOR TEACHERS II.** Class 3, cr. 3. Prerequisite: MA 547.  
 Elementary functions and basic theorems of calculus.
- MA 550. ALGEBRA FOR TEACHERS.** Class 3, cr. 3. Prerequisite: MA 351 or graduate standing.  
 Definitions and elementary properties of groups, rings, integral domains, fields, vector spaces, and matrices, with major emphasis on the rings of integers, rational numbers, complex numbers and polynomials. Intended primarily for secondary school teachers.
- MA 551. ALGEBRA FOR TEACHERS II.** Class 3, cr. 3. Prerequisite: MA 550.  
 A continuation of MA 550.
- MA 556. INTRODUCTION TO THE THEORY OF NUMBERS.** Class 3, cr. 3. Prerequisite: MA 261.  
 Divisibility, congruences, quadratic residues, Diophantine equations, the sequence of primes.
- MA 563. ADVANCED GEOMETRY.** Class 3, cr. 3.  
 A critique of Euclid's *Elements* and a detailed study of Hilbert's postulates with an introduction to non-Euclidean geometry. Primarily for prospective secondary school teachers.
- MA 571. ELEMENTARY TOPOLOGY.** Class 3, cr. 3.  
 General topological spaces and continuity. Connectedness. Separation. Compactness. Metric spaces. Function spaces.
- MA 581. INTRODUCTION TO LOGIC FOR TEACHERS.** Class 3, cr. 3. Prerequisites: MA 351 and 361.  
 Sentential and general theory of inference and nature of proof: elementary axiom systems.

## STATISTICS

- STAT 113. STATISTICS AND SOCIETY.** Class 3, cr. 3.  
 An introduction to formal and informal quantitative arguments and to the principles of statistical inference. Emphasis is placed upon intelligent evaluation of statistical arguments, especially in the areas of social science and public policy. Numerous contemporary applications of statistical inference will be discussed.
- STAT 114. ELEMENTS OF PROBABILITY AND STATISTICS.** Class 3, cr. 3. STAT 113 may be helpful.  
 Probability, principles of choice, decision problems, use of data, examples in testing and estimation.

**STAT 213. PROBABILITY AND DECISION THEORY.** Class 3, cr. 3. Prerequisite: a knowledge of college algebra.

An introduction to basic probability models and to applied decision theory. Applications to problems in the management and social sciences, including use of computer programs.

**STAT 301. ELEMENTARY STATISTICAL METHODS I.** Class 3, cr. 3. Prerequisite: college algebra.

Not open to students in the Division of Mathematical Science and Schools of Engineering.

A basic introductory statistics course with applications shown to various fields and emphasis placed on assumptions, applicability, and interpretations of various statistical techniques. Subject matter includes frequency distributions, descriptive statistics, elementary probability, normal distribution applications, sampling distribution, estimation, hypothesis testing.

## PHYSICS

*Associate Professor:* W. G. Brill.

*Assistant Professor:* V. J. Raelson.

**PHYS 152. MECHANICS.** Class 4, Lab. 2, cr. 4. Prerequisite or corequisite: MA 164 or equivalent.

Statics; uniform and accelerated motion; Newton's laws; circular motion; energy, momentum, and conservation principles; dynamics of rotation; gravitation and planetary motion; hydrostatics and hydrodynamics; simple harmonic and wave motion; sound.

**PHYS 210. THE NATURE OF PHYSICAL SCIENCE I.** Class 2, Lab. 3, cr. 3.

Development of basic concepts and theories in physical science; a terminal course.

**PHYS 211. THE NATURE OF PHYSICAL SCIENCE II.** Class 2, Lab. 3, cr. 3. Prerequisite: PHYS 210.

Continuation of PHYS 210. PHYS 210 and 211 will satisfy the physical science requirement in the School of Humanities, Social Science, and Education.

**PHYS 220. GENERAL PHYSICS.** Class 3, Lab. 2, cr. 4. Prerequisites: MA 111 and 112, or 151, or equivalent.

Mechanics, heat, and sound for students not specializing in physics.

**PHYS 221. GENERAL PHYSICS.** Class 3, Lab. 2, cr. 4. Prerequisite: PHYS 220.

Electricity, light, and modern physics for students not specializing in physics.

**PHYS 251. HEAT, ELECTRICITY, AND OPTICS.** Class 5, Lab. 2, cr. 5. Prerequisite: PHYS 152.

Heat, kinetic theory, elementary thermodynamics, heat transfer. Electrostatics, current electricity, electromagnetism, magnetic properties of matter; geometrical and physical optics.

# School of Technology

Dean G. W. McNelly in Charge, West Lafayette

## ARCHITECTURAL TECHNOLOGY

*Associate Professor:* H. S. Driggs, Jr.

**ART 150. ARCHITECTURAL CONSTRUCTION I.** Lab. 9, cr. 3. (Evening Divisions: Lab. 6, cr. 3 with outside assignments required.) Prerequisite: ART 116 or EG 110.

A study of wood frame construction through a semester project requiring planning, preliminary and working drawings, and a model of the framing system. Field trips may be included.

**ART 221. ARCHITECTURAL PRESENTATION.** Lab. 6, cr. 2. Prerequisite: EG 110 or ART 116.

Introduction to techniques of presentation drawings and models of buildings. Exercises in freehand sketching, perspective drawing, shades and shadows, and use of color in renderings. Survey of the application of color in buildings, construction, and

purpose of various types of architectural models.

**ART 222. ARCHITECTURAL CONSTRUCTION II.** Lab. 9, cr. 3. Prerequisite: ART 150.

Preparation of preliminary and working drawings for an intermediate-sized commercial or institutional building.

**ART 224. ARCHITECTURAL CONSTRUCTION III.** Lab. 9, cr. 3. Prerequisite: ART 222.

Continuation of ART 222 with emphasis on larger and more complex structures.

**ART 299. ARCHITECTURAL TECHNOLOGY.** Cr. 1-4.

Hours and subject matter to be arranged with staff. Course may be repeated up to nine hours.

## BUILDING CONSTRUCTION AND CONTRACTING

### UNDERGRADUATE LEVEL Lower-Division Courses

**BC 100. INTRODUCTION TO CONSTRUCTION.** Class 2, cr. 1.

A survey course of the construction industry, its educational programs, jobs and major building materials.

**BC 170. PLANS AND SPECIFICATIONS.** Lab. 4, cr. 2.

Reading and interpretation of the contract documents for construction. Emphasis is on the plans and specifications for a variety of structures.

**BC 190. CONSTRUCTION EXPERIENCE I.** Cr. 1.

Minimum of ten weeks of practical work experience in construction is required. Written and/or oral reports of this experience are required.

**BC 195. CONSTRUCTION OBSERVATION.** Lab. 2, cr. 1.

Directed observation and inspection of construction work in progress on or near the campus. May be repeated twice.

**BC 230. MECHANICAL AND ELECTRICAL SYSTEMS.** Class 3, cr. 3.

A survey of systems for the supply and drainage of water, the heating and cooling of buildings, and the electrical power and lighting for buildings. This course is a composite of BC 231, 232, and 233.

**BC 270. ESTIMATING.** Lab. 6, cr. 3.  
Prerequisite: BC 170.

A study of methods to estimate quantities of materials required in construction. Practice in making quantity surveys. Introduction to estimating labor and costs.

**BC 290. CONSTRUCTION EXPERIENCE II.** Cr. 1.

Minimum of ten weeks of practical work experience in construction is required. Type of work should be different than that of BC 190. Written and/or oral reports of this experience are required.

**BC 350. FIELD OPERATIONS.** Class 3, cr. 3.

A study of selected field operations including both equipment-intensive and labor-intensive tasks. The selection and management of equipment are emphasized.

**BC 375. BIDDING.** Lab 6, cr. 3.  
Prerequisite: BC 270.

A study of bidding procedures in the

construction industry. Practice in the compilation of complete bids.

**BC 390. CONSTRUCTION EXPERIENCE III.** Cr. 1.

Minimum of ten weeks of practical work experience in construction is required. Type of work should be different from that of BC 190 and 290. Written and/or oral reports of this experience are required.

**BC 455. CONSTRUCTION COMPANY MANAGEMENT.** Class 3, cr. 3. Prerequisite: senior standing.

Business-policy and financial-management problems as they relate to construction companies. Company organization, contracts, bonds, insurance, accounting systems, project control, and labor relations.

**BC 499. CONSTRUCTION TECHNOLOGY.** Cr. 1-4.

Hours, subject matter and credit to be arranged by staff. Course may be repeated for credit up to nine hours.

## CIVIL ENGINEERING TECHNOLOGY

*Associate Professor:* R. L. Taylor.

**CET 104. ELEMENTARY SURVEYING.** Class 2, Lab. 3, cr. 3.

Prerequisite or corequisite: MA 112, 150 or equivalent.

Measurement of distances, directions and angles, using the tape, level, compass, and transit. Computation of areas and traverses, lines and grades.

**CET 160. STATICS.** Class 3, cr. 3.

Prerequisite: MA 154 or equivalent.

A study of forces acting on bodies at rest, including coplaner and noncoplaner forces, concurrent and nonconcurrent forces, friction forces, and hydrostatic forces. Centroids and moments of inertia are included. Practice in use of the slide rule will be included.

**CET 208. ROUTE SURVEYING.** Class 1, Lab. 3, cr. 2. Prerequisite: CET 104.

Preliminary and construction surveys for highways and railroads, including simple, compound, reverse, and easement curves, super-elevation of curves, profiles, grade

lines, slope stakes, yardage estimates, and mass and haul diagrams.

**CET 209. LAND SURVEYING AND SUBDIVISION.** Class 1, Lab. 6, cr. 3. Prerequisite: CET 104.

Theory and practice of land surveying, subdivision, filing and recording deeds, United States governmental survey of public lands, laws of land surveying, descriptions and area computations for land surveys. Subdivision planning, calculations and plotting, water main layouts, storm and sanitary sewer calculations and layouts. Street plans and profiles.

**CET 253. HYDRAULICS AND DRAINAGE.** Class 3, cr. 3. Prerequisite: MA 150.

Basic hydrostatics, Bernoulli's equation, flow in water and sewer lines, overland and ditch drainage, and culvert size determination.

**CET 260. STRENGTH OF MATERIALS.** Class 3, cr. 3.  
Prerequisite: CET 160.

Study of stress-strain relationships, shear and bending moment diagrams, stresses and deflections of beams, axial loads, and combined stresses. Applied problems in the field of structural design.

**CET 280. STRUCTURAL CALCULATIONS.** Class 3, cr. 3.  
Prerequisite: CET 260.

Practice in the calculation of loads, reactions, shear, and moment for determinate structures. Introduction to indeterminate structures with emphasis on moment-distribution.

**CET 299. CIVIL ENGINEERING TECHNOLOGY.** Cr. 1-4.

Hours to be arranged with the staff. Primarily for third and fourth semester students. Subject matter to be assigned by the staff.

## **COMPUTER AND INFORMATION SYSTEMS (Computer Technology)**

*Associate Professors: L. F. Boness, W. H. Evans.*

**CIS 115. INTRODUCTION TO DATA PROCESSING.** Class 4, Lab. 2, cr. 5. Not open to students with credit in CIS 116 or 117.

An introduction to computers and data processing. This course is intended to familiarize the student with techniques and problem solving aids such as flowcharting for solving problems by computer programming. Computer language fundamentals will be introduced.

**CIS 116. INTRODUCTION TO DATA PROCESSING I.** Class 3, cr. 3. Not open to students with credit in CIS 115.

CIS 116-117 is a two semester version of CIS 115.

**CIS 117. INTRODUCTION TO DATA PROCESSING II.** Class 2, Lab. 2, cr. 3. Not open to students with credit in CIS 115.

Continuation of CIS 116.

**CIS 122. COMPUTER MATH.** Class 3, cr. 3. Prerequisite or corequisite: MA 147 or 150.

Selected topics in mathematics that are related to business and computer computations. Topics include: symbolic logic, binary, octal and hexadecimal number systems; determinates; matrices and linear systems.

**CIS 133. ASSEMBLY LANGUAGE PROGRAMMING I.** Class 3, Lab. 2, cr. 4. Prerequisite: CIS 115 or 116.

Programming of a digital computer at the machine language and assembly language levels with emphasis on the meticulous step by step development of a program. Topics include: computer hardware, stored program concepts, operation codes, addresses, flow diagrams and assembly language translators. In the laboratory, students write, process and debug programs using the computer on an open-shop basis.

**CIS 134. ASSEMBLY LANGUAGE PROGRAMMING II.** Class 3, Lab. 2, cr. 4. Prerequisite: CIS 133.

Advanced symbolic programming techniques, programming exercises and case studies are designed to familiarize the student with actual programming practices and to bridge the gap from the theoretical to the real world of data processing.

**CIS 198. DATA PROCESSING PRACTICE I.** Cr. 1.

Practice in industry with written reports of this practice for co-op students. May be repeated once.

**CIS 200. COMPUTER PROGRAMMING FUNDAMENTALS.** Class 2, Lab. 2, Cr. 3.

The presentation of the basic elements of programming digital computers. There is a treatment of absolute and symbolic coding, magnetic tape functions, and random access processing. Major emphasis will be on compiler language (FORTRAN) programming.

**CIS 225. STATISTICAL METHODS.** Class 3, cr. 3. Prerequisite or corequisite: CIS 264.

An introduction to elementary statistics with emphasis on the analysis of actual data. Topics include: description and representation of sample data, probability, theoretical distributions, sampling, estimating, correlation, regression, and computer statistical routines.

**CIS 254. COMMERCIAL SYSTEMS APPLICATIONS.** Class 3, cr. 3. Prerequisite: CIS 117.

An introduction to the problems of developing integrated data processing systems for more efficient handling of the data flow in modern business. The student will produce reports needed by management, prepare flowcharts, design forms, and write procedures for designated systems.

**CIS 261. RPG PROGRAMMING.** Class 2, Lab. 2, cr. 3.

Computer programming using RPG, Report Program Generator. Study of the language structure, applications, and related utility programs.

**CIS 264. FORTRAN PROGRAMMING.** Class 2, Lab. 2, cr. 3. Prerequisites: MA 147 and MA 148.

The structure and details of FORTRAN, a mathematically oriented compiler language. Numerous problems are solved on the computer to demonstrate the many facets of the language.

**CIS 265. COBOL PROGRAMMING.** Class 2, Lab. 2, cr. 3. Prerequisite: A prior programming course.

A study of the programming language, COBOL, which is oriented toward data handling and processing tasks. The student will study the structure and details of COBOL and perform programming exercises as well as consider practical applications.

**CIS 286. COMPUTER OPERATING SYSTEMS I.** Class 2, Lab. 2, cr. 3. Prerequisites: CIS 133 and CIS 265.

An introduction to the computer operating systems and other systems software. Topics include: utility programs, job control monitors, program supervisors, loaders and link editors.

**CIS 290. COMPUTER PROJECT.** Cr. 1-4.

Independent study for sophomore students who desire to execute a complete computer-oriented project. Course may be repeated for credit up to six hours.

**CIS 294. COMPUTER SEMINAR.** Class 2, cr. 1. Prerequisite: An introductory computer course.

Current problems and issues in the computer field. Field trips are required.

**CIS 299. COMPUTER TECHNOLOGY.** Cr. 1-4. May be repeated for credit up to nine hours.

Hours and credit to be arranged. Primarily for students who desire to execute a project from start to finish on the computer.

**CIS 300. INTRODUCTION TO COMPUTERS.** Class 3, cr. 3 or Class 2, cr. 3.

A broad survey of computers, data processing, and applications. Punched cards preparation, unit record equipment, computer hardware, and programming principles and languages. Applications emphasize how the computer is used as a tool to assist the user.

# ELECTRICAL ENGINEERING TECHNOLOGY

Associate Professor: W. L. Stoakes.

- EET 102. ELECTRICAL CIRCUITS I.** Class 3, Lab. 2, cr. 4. Prerequisite or corequisite: MA 147.

A study of DC electrical circuits, Ohm's Law, Kirchoff's Laws, series and parallel circuits, power, introductory magnetism, ammeters, voltmeters, ohmmeters, inductance, capacitance, and an introduction to alternating voltages, currents, and reactances.

- EET 104. ELECTRONICS I.** Class 2, Lab. 2, cr. 3. Prerequisite or corequisite: EET 102, MA 147, or consent of instructor.

Orientation topics on departmental and university services and industrial careers. Field trips related to career fields may be required.

An introduction to conductors, semiconductors, insulators, and the physical construction and elementary operation of electron tubes, solid-state diodes, and transistors. Includes characteristic curves and properties related to DC load lines. An introduction to the use of electronic calculators and digital computers.

- EET 152. ELECTRICAL CIRCUITS II.** Class 3, Lab. 2, cr. 4. Prerequisites: EET 102 and MA 148.

A study of DC and AC electrical circuits, network theorems, j operator, phasors, reactances, impedances, phase relationships, power, resonance, ideal and aircore transformers and an introduction to graphical techniques and transients.

- EET 154. ELECTRONICS II.** Class 3, Lab. 2, cr. 4. Prerequisites: EET 102, 104 and MA 148; prerequisite or corequisite: EET 152.

A study of the characteristics and applications of transistors, integrated circuits, and other solid-state devices. Includes rectifier circuits, wave-form interpretation, AC and DC load lines, biasing techniques, equivalent circuits, single and multistage class A small-signal amplifiers, and h parameters.

- EET 204. ELECTRONICS III.** Class 3, Lab. 2, cr. 4. Prerequisites: EET 152, 154.

A study of the applications of transistors, integrated circuits and other solid-state devices. Feedback principles as applied to amplifiers, oscillators, and regulated power supplies. Includes large-signal power amplifiers, special-purpose amplifiers, and AM and FM modulation and detection techniques. Introduction to filters as applied to tuned amplifiers and rectifier circuits.

- EET 212. ELECTRICAL POWER AND MACHINERY.** Class 3, Lab. 2, cr. 4. Prerequisite: EET 152.

A study of power transformers, single and polyphase circuits, and an introduction to the National Electric Code. The study of DC machines and AC single and polyphase synchronous and induction machines.

- EET 254. DIGITAL FUNDAMENTALS.** Class 3, Lab. 2, cr. 4. Prerequisite: EET 154.

A study of switching circuits, waveshaping, logic, gates, binary arithmetic, codes, Boolean algebra, mapping and other simplification techniques. Small scale (SSI) and medium scale (MSI) integrated circuits are used in combinational and introductory sequential logic circuits.

- EET 303. COMMUNICATIONS I.** Class 3, Lab. 2, cr. 4. Prerequisite: EET 204.

A study of AM and FM modulation and detection, receivers, transmitters, networks, filters, antennas, and transmission lines through the VHF frequency spectrum.

- EET 316. TELEVISION I.** Class 3, Lab. 2, cr. 4. Prerequisite: EET 204.

A study of television transmission and receiving systems. Includes analysis of transmitted signal, FM, video amplifiers, power supplies, synchronization, deflection alignment and antennas.

**EET 317. DIGITAL CIRCUITS AND SUBSYSTEMS.** Class 3, Lab. 2, cr. 4. Prerequisites: EET 204 and EET 254.

A continuation of EET 254. A study of sequential circuits, memories, A/D and D/A conversion, counters, registers, arithmetic logic units, timing, and multiplexers in MSI and LSI form. An introduction to elementary I/O devices is considered.

**EET 331. GENERATION AND TRANSMISSION OF ELECTRICAL POWER.** Class 3, Lab. 2, cr. 4. Prerequisite: EET 212.

A study of the generation and transmission of electrical energy. Includes techniques used by electric utilities for the protection of generating equipment and transmission lines, an introduction to the economic considerations of power plant operation, and three-winding transformers and methods of solving unbalanced three-phase systems.

## GENERAL STUDIES

*Professor:* R. F. Schwarz.

**GNT 220. TECHNICAL REPORT WRITING.** Class 3, cr. 3.

Extensive application of the principles of good writing in industrial reporting, with emphasis on the techniques of presenting information graphically as well as in a clear, concise written form.

## INDUSTRIAL ENGINEERING TECHNOLOGY

*Professor:* R. M. Bobillo.

**IET 104. INDUSTRIAL ORGANIZATION.** Class 3, cr. 3. Not open to students who have completed IET 105 and/or 106.

A detailed survey of organizational, financial, marketing, and accounting activities; duties of management, planning, control, personnel, safety, wages, policy, and human factors necessary for effective management.

**IET 120. SYSTEMS AND PROCEDURES.** Class 3, cr. 3.

An introduction to the systems concept. Surveys recognizing and defining the system's problem; the management audit and tools for systems analysis; design and control of forms, work simplification, work measurement and procedures; operations research; punched card systems; management and administration; and organization of the systems function.

**IET 204. TECHNIQUES OF MAINTAINING QUALITY.** Class 2, Lab. 3, cr. 3. Prerequisite: MA 150.

An analysis of the basic principles of quality control includes statistical aspects of tolerances, basic concept of probabilities, frequency distribution, X & R charts and uses of mechanical, electronic, air and light devices for checking and measuring to determine quality levels of acceptance.

**IET 220. CRITICAL PATH ANALYSIS.** Class 1, Lab. 3, cr. 2.

Detailed study of planning and control of a schedule by network techniques, including the time/cost analysis of CPM scheduling for application on construction projects, job shop scheduling and related problems. Includes an introduction to PERT and the use of the computer for network analysis.

**IET 224. PRODUCTION PLANNING AND CONTROL.** Class 2, Lab. 3, cr. 3. Prerequisites: MET 180 and SPV 252.

Reproduction planning of the most economical methods, machines, operations, and materials for the manufacture of a product. The planning, scheduling, routing, and detailed procedure of production control.

**IET 250. FUNDAMENTALS OF PRODUCTION COST ANALYSIS.** Class 2, Lab. 2, cr. 3.

Surveys of fundamental mechanics of accounting, principles of account classification, financial and operating statements, and the generation of cost data according to cost accounting principles. Surveys the generation of cost data according to the principles of engineering economy. Examines applications of cost accounting data and engineering economy cost data to specific management decision areas through selected case problems.

**IET 262. MOTION STUDY AND WORK METHODS.** Class 2, Lab. 3, cr. 3. Prerequisite: SPV 252; prerequisite or corequisite: MA 112 or equivalent.

The study of the various techniques of motion study including process charts, operation charts, multiple activity charts, micro and memo motion study, therbligs, the movie camera, along with actual practice in their use. Includes study and application of the basic principles used to develop better methods of performing work.

**IET 266. WORK MEASUREMENT AND INCENTIVES.** Class 2, Lab. 3, cr. 3. Prerequisite: IET 262.

A study of the fundamentals of time study and work measurement with actual practice in their use. Includes stop watch time study, measuring work with movie camera, the establishment of allowances

by both stop watch and work sampling studies, the establishment and use of predetermined time values, and the construction and use of work measurement formulae.

**IET 272. JOB EVALUATION.** Class 2, cr. 2. Prerequisites: SPV 252 and MA 112.

A survey of the basic principles and significance of job evaluation. An analysis, of current practices and techniques used in job analysis, job descriptions, and job evaluation.

**IET 280. WAGE INCENTIVES.** Class 2, cr. 2. Prerequisites: IET 260 and 272.

An analysis and study of the various types of wage incentive plans, their significance, adaptability, effectiveness, and equitability. A systematic appraisal of the basic objectives and currently used techniques in the administration of wage incentive programs.

**IET 296. INDUSTRIAL TECHNOLOGY CASE PROBLEMS.** Class 2, cr. 2.

Application of theories developed in the several industrial technology courses to select general case problems—to provide practice in the integration of principles.

**IET 312. MATERIALS HANDLING.** Class 3, cr. 3. Prerequisite: IET 268.

A survey of materials handling elements, the unit load, packaging, bulk handling, the economics of materials handling, improving existing handling methods, justification for handling equipment, special handling techniques, and the management of the materials handling division in the industrial organization.

# MECHANICAL ENGINEERING TECHNOLOGY

Associate Professor: F. R. Lisarelli

**MET 102. PRODUCTION DRAWING.** Lab 6, cr. 3. Prerequisite: EG 110.

Preparation of working drawings from layouts, drafting simplification, functional dimensioning, assembly drawings, detailing of machine elements, working with manufacturers' catalogs, applying fits, limits and tolerances to dimensions for interchangeable manufacture; information as to material, physical treatment, and manufacturing processes. The student works from layouts with a minimum of information so that self reliance in detailing may be developed.

**MET 111. APPLIED STATICs.** Class 3, cr. 3. Prerequisite or corequisite: MA 150.

Force systems, resultants and equilibrium, centroids of areas and centers of gravity of bodies, trusses, frames, beams, friction and moments of inertia of areas and bodies.

**MET 160. APPLIED ENGINEERING COMPUTATIONS.** Lab 3, cr. 1.

Practical application of the proper use of the slide rule, desk calculator and introduction to the electronic computer and dimensional analysis.

**MET 180. MATERIALS AND PROCESSES.** Class 2, cr. 2.

Application and characteristic, both physical and chemical, of the materials most commonly used in industry; the mechanical processes by which materials may be shaped or formed.

**MET 211. APPLIED STRENGTH OF MATERIALS.** Class 4, cr. 4. Prerequisite: MET 111.

Principles of applied strength of materials primarily with reference to mechanical design.

**MET 213. DYNAMICS.** Class 2, cr. 2. Prerequisite: MET 111.

Basic fundamentals of dynamics: displacement, velocities, accelerations, work, energy, power, impulse, momentum, and impact.

**MET 214. MACHINE ELEMENTS.** Class 3, cr. 3. Prerequisites: MET 102, 111, 211 and MA 222.

A survey of the more important elements used in tools and machines, and their general characteristics pertaining to application, operational behavior, efficiency, economy, and standardization.

**MET 220. HEAT/POWER.** Class 3, cr. 3. Prerequisite: PHYS 220.

A survey of steam and nuclear power plants, internal combustion engines, gas turbines, pumps, compressors, fans and blowers, refrigeration. Some theory in thermodynamics, combustion of fuels, heat transfer. Power generation and application to various fields with special mention of transportation.

**MET 230. FLUID POWER.** Class 3, cr. 3.

Properties of hydraulic fluids, generation, transmission, and utilization of hydraulic power, hydraulic and pneumatic controls and circuits.

**MET 236. JIG AND FIXTURE DESIGN.** Lab. 6, cr. 3.

Application of principles in the design and construction of drilling, milling, reaming and assembly jigs and fixtures; information related to materials, heat treatment and cost estimating. Gaging characteristics, selection and design for interchangeable manufacture.

**MET 256. MATERIAL FABRICATION.** Class 2, cr. 2. Prerequisite or corequisite: MET 180.

A study of the physical characteristics of metals and non-metals with respect to their behavior during fabrication; methods of material removal; elementary aspects of machine tool operation and tooling requirements.

**MET 313. APPLIED FLUID MECHANICS.** Class 3, cr. 3. Prerequisite: MET 320.

Fundamentals of fluid mechanics, including: properties of fluids, pressure, hydrostatic force on submerged areas; kinematics and dynamics of fluid flow; friction losses and sizing of pipes.

**MET 320. APPLIED THERMODYNAMICS.** Class 3, cr. 3. Prerequisite: MA 224.

Fundamentals of thermodynamics including applications of first and second laws, enthalpy, entropy, reversible and irreversible processes.

**MET 340. PIPING AND PLUMBING DESIGN.** Class 3, cr. 3. Prerequisite: MET 230.

Design of plumbing systems, including losses in pipes, fittings, nozzles, orifices, etc.; steam, water and oil systems, use of

piping handbooks and catalogs utilized in conjunction with State of Indiana Piping Code.

**MET 360. HEATING, VENTILATING, AND AIR CONDITIONING.** Class 3, cr. 3. Prerequisite: MET 220.

A study of heat losses, heat producing equipment and cooling equipment in addition to the design of the direct systems. Includes controls and cost estimating for commercial, industrial and residential systems. Codes and standards are emphasized throughout the course.

## NURSING

H. R. Johnson, Head of the Department

*Section Chairman:* I. P. Brunner.

*Associate Professors:* M. J. Asteriadis, I. P. Brunner.

*Assistant Professors:* R. J. Alexander, P. A. Babcock, P. P. Garde, M. V. Whitlow.

*Instructors:* E. M. Alverson, P. M. Daly, E. A. Fiegle, E. J. Hayes, Z. J. New, C. M. Predd, J. I. Van Cauwenbergh.

**NUR 115. NURSING I.** Class 4, Lab. 6, cr. 6.

This course reviews the progress of nursing through the present introducing current legal and ethical aspects. The nursing process is utilized to present basic nursing concepts emphasizing basic human needs, interpersonal relationships, and dynamics of behavior. Fundamental skills and patient care are developed through classroom methods, university and hospital laboratories, and students' oral and written communication.

**NUR 116. NURSING II.** Class 4, Lab. 6, cr. 6. Prerequisite: NUR 115.

The content of this course, utilizing the nursing process, emphasizes the administration of medications, the nursing care of adults and children with selected medical-surgical entities, and the principles of patient-family teaching. Surgical intervention as a stress situation is included in both theory and laboratory experience. Content is based upon scientific principles from allied fields. Laboratory experiences are provided in hospitals and other agencies.

**NUR 224. NURSING III.** Class 5, Lab. 15, cr. 10. Prerequisites: NUR 115, NUR 116, PCOL 201.

The content of this course emphasizes the use of the nursing process in the care of adults and children who experience complex medical and surgical problems.

**NUR 225. MATERNAL AND CHILD HEALTH NURSING.** Class 3, Lab. 6, cr. 5. Prerequisites: NUR 115, NUR 116, PCOL 201.

The nursing concepts in maternal and child nursing are related to the emerging family group throughout the maternity cycle and preschool age. Deviations from the normal maternity cycle and diseases and conditions unique to childhood are included. Emphasis will be placed on the physical, social, and emotional responses to health and illness. Appropriate community resources are utilized as available.

**NUR 240. PSYCHIATRIC — MENTAL HEALTH NURSING.** Class 3, Lab. 6, cr. 5. Prerequisites: NUR 115, NUR 116, PCOL 201.

NUR 240 stresses the patient's behavior and the nurse's reaction. Based on knowledge previously acquired, this course enlarges upon the principles and techniques of the nurse's role in the multiple approaches and therapies currently used in treating patients who are emotionally ill. Laboratory experiences are provided in hospitals and other community agencies.

**NUR 280. ISSUES IN NURSING.** Class 3, cr. 3.

Analyze the history of nursing and its relationship to the role of the nurse in society and the professional nursing associations of today. Study challenges, responsibilities, and employment opportunities for the registered nurse. Examine current trends in health care, professional issues, nursing practice standards, legal aspects of nursing, and implications of health legislation.

## SUPERVISION

*Professor:* R. M. Bobillo.

*Associate Professor:* J. R. Blackwell.

*Assistant Professor:* T. F. Brady.

**SPV 100. SUPERVISION LECTURES.** Class 1, cr. 1.

Introduction and orientation to the Department of Supervision and an overview of the supervision and personnel functions in the world of work.

**SPV 252. HUMAN RELATIONS IN SUPERVISION.** Class 3, cr. 3.

Study of the basis and organization of individual and group behavior. Special emphasis on typical supervisory relationships.

**SPV 268. ELEMENTS OF LAW.** Class 3, cr. 3.

An introductory course with a brief comparison of the American federal system and the parliamentary system of government, and covering law with emphasis on judicial review, and court jurisdiction and procedure in general and basic law in particular.

**SPV 331. OCCUPATIONAL SAFETY AND HEALTH.** Class 3, cr. 3. Prerequisite: consent of instructor.

A presentation of those aspects of occupational safety and health which are most essential to the first-line supervisor. Emphasis is placed on developing an understanding of the economic, legal and social factors related to providing a safe and healthful working environment.

**SPV 350. APPLIED CREATIVITY FOR BUSINESS AND INDUSTRY.** Class 3, cr. 3.

A study of the ways individuals can become more creative and how they can develop an environment which encourages creativity from employees.

**SPV 362. COOPERATIVE OCCUPATIONAL INTERNSHIP.** Cr. 3-6. May be repeated to a maximum of 24. Consent of department required.

Organized and supervised work experience directed toward preparation for supervisory, personnel and related positions. Planned and supervised by the departmental staff in cooperation with employing organizations.

**SPV 374. ELEMENTS OF SUPERVISION.** Class 3, cr. 3.

Introduction to and overview of the fundamental concepts of supervision. Emphasis is placed on the supervisor's major functions and essential areas of knowledge, his/her relations with others and his/her personal development.

**SPV 375. BASIC METHODS OF TRAINING FOR SUPERVISORS.** Class 3, cr. 3.

Principles, practices, and variations of basic methods of instruction as related to training situations found in the world of work. Emphasis on the supervisor as a trainer.

**SPV 376. SUPERVISION AND PERSONNEL PROBLEMS.** Class 3, cr. 3. Prerequisite: SPV 374 or consent of instructor.

Analysis and discussion of selected case problems concerning typical personnel situations faced by the supervisor. Emphasis directed toward development of student attitude, philosophy, analytical ability and problem solving skills within the working environment.

**SPV 462. SUPERVISED WORK EXPERIENCE.** Cr. 3. Consent of department required.

Supervised work experience directed toward providing orientation, background, and insight into work situations and operations.

**SPV 474. CONFERENCE LEADERSHIP TRAINING.** Class 2, Lab. 3, cr. 3.

Understanding the role of the conference in the world of work, with practical applications of the various techniques of conference leadership, and an understanding of group dynamics in the conference situation.

**SPV 567. SUPERVISED FIELD PRACTICE IN TRAINING AND DEVELOPMENT.** Cr. 3.

**SPV 574. MANAGERIAL TRAINING AND DEVELOPMENT.** Class 3, cr. 3. Prerequisite: SPV 374. Open to seniors and graduate students only.

Review of current managerial education and development theories and practices; discussion of social, economic, and political changes affecting business and the work of managing; implications of these changes for individual manager development and growth.

**SPV 577. ORGANIZATION AND ADMINISTRATION OF TRAINING AND DEVELOPMENT.** Class 3, cr. 3. Prerequisite: SPV 375. Prerequisite or corequisite: SPV 574. Open to seniors and graduate students only.

The function and management of training and development in the world of work.

**SPV 590. INDIVIDUAL RESEARCH PROBLEMS IN SUPERVISION AND PERSONNEL.** Cr. 1-6. Consent of department required.

Opportunity to study specific problems in the field of supervision and personnel under the guidance of a qualified faculty member within the department. Does not include thesis work.

## ADMINISTRATIVE AND INSTRUCTIONAL STAFF

- RINDA J. ALEXANDER (1976) .... Assistant Professor of Nursing  
A.D., Purdue, 1971; B.S., 1975; M.S., St. Xavier, 1976.
- ELISE M. ALVERSON (1978) .... Instructor in Nursing  
B.S., St. Louis, 1972.
- GEORGE T. ASTERIADIS JR. (1971) Associate Professor of Biology  
B.S., State University of New York (Oswego), 1966; Ph.D., Purdue, 1971.
- MARILYN J. ASTERIADIS (1972) . Associate Professor of Nursing  
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- JOELLEN W. BURNHAM (1975) Coordinator of Campus Relations  
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- JOHN T. COGGINS (1975) ..... Student Affairs/Counseling Center Officer  
B.A., St. Thomas, 1967; M.A., 1968.
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     Vice Chancellor for Academic Services;  
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 1957.
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     Professor of Nursing  
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- ROBERT M. HAWTHORNE (1968) Associate  
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- E. JEAN HAYES (1974) ..... Instructor  
     in Nursing  
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- JAMES C. HAYES (1970) ..... Associate  
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     Instructor in Biology  
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- PEGGY J. HORNUNG (1975) .... Comptroller  
 B.S., Valparaiso, 1975.
- HOWARD JABLON (1966) ..... Professor  
     of History  
 B.A., Hofstra, 1961; M.A., Rutgers, 1962; Ph.D.,  
 1967.
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     Professor of Mathematics  
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 1970.
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     sions Officer  
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     Professor in the Community College  
 B.S., Washington (St. Louis), 1950; M.Ed.,  
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     Professor of Mathematics  
 B.S., Kansas, 1960; M.S., 1963; M.S., Purdue,  
 1966.
- FREDERICK R. LISARELLI (1946) .....  
     Associate Professor  
     of Mechanical Engineering Technology  
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- HERBERT J. MILLER (1977) .... Director of  
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 B.S.C.E., Purdue, 1969.
- JOHN E. MOO (1968) ..... Chief of  
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- HARVEY D. MOORE (1973) .... Vice Chancellor for Student and Community Services; Associate Professor of Education  
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- ZOE J. NEW (1976) .... Instructor in Nursing  
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- HAROLD W. PHILLIPS (1968) .... Assistant Professor of English  
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- GEORGE M. ROYSTER III (1974) .... Registration Officer  
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- ROGER C. SCHLOBIN (1971) .... Associate Professor of English  
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- ROBERT F. SCHWARZ (1952) .... Professor of General Studies  
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- HENRY SOKOLOWSKI (1968) .... Assistant Professor of Foreign Languages  
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- JOHN J. STANFIELD (1967) .... Associate Professor of English  
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- HERMAN A. SZYMANSKI (1977) .. Assistant Professor of Chemistry  
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- RICHARD L. TAYLOR (1968) .... Associate Professor of Civil Engineering Technology  
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- JOHN W. TUCKER (1972) ..... Chancellor; Professor of Education  
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- JANICE I. VAN CAUWENBERGH (1978) ... Instructor in Nursing  
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# CAMPUS CALENDAR

## 1979

**SEP**

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	
30							

**OCT**

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28	29	30	31			

**NOV**

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**DEC**

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30	31						

## 1980

**JAN**

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27	28	29	30	31		

**MAY**

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**FEB**

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**JUN**

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29	30					

**MAR**

1						
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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

**JUL**

1	2	3	4	5		
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

**APR**

1	2	3	4	5		
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

**AUG**

1	2					
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

## 1979 Fall Semester

August 27  
*Classes begin*

October 15 & 16  
*Mid-Semester Break*

November 22 & 23  
*Thanksgiving Vacation*

December 14  
*Classes end*

December 20  
*Finals end*

## 1980 Spring Semester

January 14  
*Classes begin*

March 10-14  
*Spring Break*

May 2  
*Classes end*

May 8  
*Finals end*

May 15  
*Commencement*

## 1980 Summer Session

June 16  
*Classes begin*

August 5  
*Classes end*

August 8  
*Finals end*

